THE
AMERICAN FARMER

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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METEOROLOGY FOR THE FARMERS.

By Lt. Maury, U. S. N.

Observatory, *Washington*, June 18, '55.

To the Editors of the American Farmer.

Gentlemen:—I am much obliged to you for your favor of the 9th inst. You are right; I did not intend to confine the appeal to the farmers of any "pent-up Utica." I intended to make it as broad as the land.

You ask for the plan of co-operation. It is very simple, and calls on the farmers for little more than good will.

I first want authority to take the preliminary steps, and to confer with other meteorologists and men of science at home and abroad, with the view of establishing a uniform system of meteorological observations for the land, as we have done for the sea.

If any officer of the government were authorized to say to the farmers, as I have to the sailors, here is the form of a meteorological journal; it shows you the observations that are wanted, the hours at which they are to be made; tells what instruments are required, and how they are to be used: take it, furnish the goverment with the observations, and in return the government will discuss them, and give you a copy of the results when published—he would have at once and without cost a volunteer corps of observers that would furnish him with all the data requisite for a complete study of both agricultural and sanitary meteorology.

Such an offer to the sailors, has enlisted a corps of observers for the sea, by whose co-operation results the most important and valuable, and as unexpected as valuable, have been obtained.

Could not at least one farmer be found on the average for every county in every State that would gladly undertake the observations? I don't think there would be any difficulty on that score. Sailors have been found to do as much for every part of the sea—on the average ten observers for a State would be sufficient.

Now if we could get the English government, and the French government, and the Russian government, and the other Christian states both of the Old World and the New to do the same by their farmers, we shall have the whole surface of our planet covered with meteorological observers acting in concert, and eliciting from nature under all varieties of climate and circumstance, answers to the same questions, and that too at no other expense than what each government should choose to incur for the discussion and publication of the observations that are made by its own citizens or subjects.

What is wanted in a system of observations like this, is uniformity. Hence, co-operation—an agreement to observe the same things at the same times—is essential to anything like success. We want not only corresponding observations as to the time, but we want them made with instruments that are alike, or that can be compared; and then, we may expect to find out something certain and valuable, concerning the movements of this grand and beautiful machine called the atmosphere.

Suppose a pretentious fly should place itself upon a steam engine, and from its own little narrow contracted field of observation, attempt to expound the structure of the entire machine. If it had the intelligence both to observe and to reason, it would not find itself more bewildered than any one does and must, who from an isolated series of meteorological observations, attempts to learn the laws which govern the atmosphere and regulate climates.

If you ask me to state beforehand what particular discoveries or special results of value I expect to make, I answer,—If I could tell, I would not ask your assistance to make them. The fields meteorological are large—there are many of them, and all that I do know about them is, that there is in them *mighty* harvests of many sorts.

Some years ago I commenced such a system for the sea, as I am now advocating—and as I now both see and feel the necessity of—for the land. After we had been at work a little while and begun to gather in a harvest of useful results by discovering new truths and facts, Congress authorized the Secretary of the Navy to employ three small vessels of the Navy, to assist me in perfecting these discoveries, and pushing forward investigations.

Now you would have said, what two things can be more remote than maps to show which way the winds blow, and a sub-marine telegraph across the Atlantic. Yet it seems that they are closely con-

nected, for researches undertaken for the one are found to bear directly upon the other. Among the early fruits gathered by pushing our discoveries, even with the slender means afforded by Congress,—for the Secretary was authorized to let me have these three small vessels only in case they should cost nothing,—there is a promise of a submarine telegraph across the Atlantic.

We are told by the public prints, that a company has been formed for the purpose, the money raised, contracts made, and the cable that is to hold the wires and span the ocean commenced to be made. I have a piece of it now on the table before me.

One of the results of getting the wires across, will be to place the farmers with their provision markets and produce exactly half the distance in time—and time now seems to be the only true measure of distance, from Europe that they now are. Let us illustrate the value in one respect only of this telegraph to the farmers: a demand springs up in England for breadstuffs, for instance. The news must now wait for the steamer to sail before it is ready to come, and by the time she reaches our shores, and the produce can be sent forward, the chief granaries of Europe have been ransacked, and the American dealer finds himself too late in the market.

But when that telegraphic plateau, which we have discovered in the Atlantic, shall be threaded with the magnetic cable, the intelligence will be known in New York, Cincinnati, St. Louis and New Orleans as soon as it is in Liverpool. Straightway the produce is put in motion, and instead of coming in "the day after the fair," as is now too often the case, it will arrive with the young of the flood that comes rolling in from the East to meet the demand. By this achievement, or by the achievements which these investigations at sea have already accomplished in the shortening of voyages and saving of time, who have been the greater gainers, the farmers or the merchants?

Storms on land have a beginning and an end; that is, they commence at one place, and frequently after several days travel end at some other; at least so it is held. What would it be worth to the farmer, or the merchant, or to any body, if he could know with something like certainty the kind of weather he might always expect one, two, three or more days ahead?

I think it not at all unlikely that such, to some extent at least, would be among the first fruits of this system of observations that I am proposing.

Certain of the observers scattered over all parts of the country, would probably be required to make daily reports to the central office in Washington as to the weather, each for his own station—say at 9 A. M. This would soon enable us to determine the laws of progress as well as the march of the various states of weather, such as gales, rains, snow-storms and the like; so that by knowing in what part of the country a storm had arisen, we should—learning through the telegraph the direction it might take—be enabled to calculate its rate of travel, and to predict within a few hours the time it would arrive at different places on its line of march; and knowing these, the telegraphic agency which the newspaper press of the country has established here, would, without more ado or further cost, make the announcement the next morning in all the papers of the land.

I allude to this as an exemplification only of some of the first fruits of the plan. I do not suppose that we should be able to telegraph in advance of every shower of rain, but without doubt the march of the rains that are general, can be determined in time to give the people in some portions of the country at least, warning of their approach.

Such an office as will be required here in Washington to carry out the details of this plan is already in existence. It was established by Mr. Calhoun when he was Secretary of War, and it is under the control of the Surgeon General of the Army. There the meteorological observations that are made at our military posts are discussed and published; and one of the most valuable and interesting reports concerning the meteorology and climates of the country that has ever appeared, is now in course of publication there. Or such an office might be made a branch of the "Agricultural divison of the Patent Office." In either case the nucleus for it is already in existence; and the only expense necessary would be on account of the addition to the force of the office that would be required to discuss the observations after they are made.

Hence, you will perceive that what I want is, that the farmers and printers, and all who are interested in the weather, should not only give me their good will, but that they should use their influence in helping to bring about such a system of meteorological co-operation for the land, as we have already established for the sea.

I make the appeal to the farming interest especially, because that is the great interest to be subserved by the scheme; and if the farmers do not really care enough about it to use their influence with their representatives in Congress to procure the very trifling appropriation that is required to get it under way, I do not see why I should give myself any further trouble in the matter.

Will you not bring the subject in some tangible shape before the agricultural societies of the country? A simple memorial from them to Congress, would not fail to procure all the legislative aid necessary.

Some of the leading scientific men of Europe are ready to join us in such a plan; and with authority to confer with them *officially* as to details, I have no doubt that most of the governments of the world would undertake, each for itself and within its own territories, a corresponding series of observations, so that we should then be able to study the movements of this great atmospherical machinery of our planet as a whole, and not as hitherto in isolated detached parts.

Respectfully, &c.,

M. F. MAURY, Lt. U. S. N.

MESSRS. SANDS & WORTHINGTON,

Editors of the American Farmer, Baltimore.

N. B.—Series of observations more or less extensive have been undertaken in various parts of the country, and for objects more or less general and useful. Among them may be mentioned those of the Smithsonian Institution, under the direction of Prof. Henry, the immediate object of which is an investigation of the law of storms. Several of the States, and many individuals are co-operating with him;—also those of Louisiana by Dr. Barton, concerning sanitary laws,—and those of Prof. Espy and others.

It is hardly necessary to add that the plan now proposed is not calculated to interfere with any of

these; on the contrary, it is in furtherance of them all, and differs from them only in being universal, and in establishing co-operation and concert between the observers at sea and those on land.

WORK FOR THE MONTH.

AUGUST.

Of the Rye Crop.

It is complained of this crop that its product of grain does not correspond with the quantity of straw standing on the ground, and really we cannot conceive that there is any mystery in this; for it is the universal custom to consign this crop to the poorest field on the farm, and in nine cases out of ten without any manure. The grower appearing to act upon the unphilosophic principle, that this plant does not require food, as if something could be grown out of nothing. It is a truth, that it does not require as rich a soil to grow it as is required for wheat; but still it is but reasonable to presume that, like wheat, or any other member of the grain producing family, it must be provided with the means of sustenance, or it cannot grow to perfection and yield its fruit in abundance. If we look to its quantity of produce, in *grain* as an object—and all should—then it follows as a reasonable conclusion, that we should provide it with the wherewithal, in the shape of food, to form it out of.

Now, let us look at the relative proportions of nutritious matter in rye and wheat. *Thaer*, who is good authority, being at once a scientific, as well as a practical farmer, and who made experiments to ascertain the quantities of nutritious matter in rye and wheat, states their real comparative value to be as 64 to 71.

That a portion of this nutrimental matter, is furnished to the plant, in the form of nitrogen, by the depositions of the atmosphere, there can be no question; but then, to avail of this source of supply, the soil itself must be in a condition to attract and absorb it, or there will be little or no power of retention, as each day's sun will exhale it. In proportion to the quantity of mould in a soil, to a certain extent, is this power determined. The soil upon which rye is mostly sown, is light and exhausted sand—a description of land which, by nature, does not possess the power of retention, nor that of absorption, unless when aided by the application of such manures as on decomposition, furnish *mould*, which, in fact is the chief agent in clothing soils with these powers. Clay is a great retainer, but unless such land be well prepared, and kept open to the influences of the atmosphere, so as to impart to it the powers of attraction and condensation, its powers in this regard are greatly depressed. But as rye is chiefly seeded, as we have before remarked, on light sands, we must address ourselves to such manures as will suit them.

Of the Manure.—Ten loads of barn-yard and stable manure per acre, will supply the necessary food for an acre in rye—so will 10 loads of wood's-mould, mixed with 5 loads of stable manure—so, also, will 10 loads of marsh, river, or creek mud, mixed with 150 lbs. of Peruvian guano, and 1 bushel of plaster.

Preparation of the ground.—Plough the manure in deep, and thoroughly pulverize the soil, by harrowing.

Quantity of seed per acre.—A bushel of seed rye, is usually sown per acre, though we prefer five pecks.

Method of Seeding.—Sow broadcast, harrow the seed in, both furrow-wise, and cross-wise, then lay off water furrows, and finish off by rolling across the furrows.

Time of Sowing.—Sow as early in this month as you can possibly get the seed in, the earlier the better, as early sowing enables the plants to entrench their roots in the ground; and measurably imparts to them the power of withstanding winter-killing. Some object to early sowing, on the ground that the rye becomes rank; but as there is an economic remedy for this, we do not regard this objection as serious. The remedy is to turn in one's calves and sheep in October, to eat the plants partially down, should they be rank. This remedy has a two-fold operation in it—the rye is despoiled of its *rankness*, while the calves and sheep *prosper and fatten*, and are in good condition when the time comes to carry them into their sheds, yards, or stables, as the case may be—and we all know that when such stock are in good condition when confined in their winter quarters, that they winter better.

There is a practice of some farmers, connected with the cultivation of rye, that we think has common sense and reason to commend it to our acceptance. It is this,—they sow at the same time they seed to rye, half a bushel of buckwheat, per acre. Buckwheat being a plant very sensitive to the effects of cold, is killed by the first frost, falls, and protects the rye plants through the winter. As soon in spring as a horse and roller can be safely trusted on the ground, the roller is passed over it, to press the buckwheat down to the earth, where it performs the triple office of shading the ground, and, by decomposition, of nourishing the rye crop, while it operates to absorb the enriching gases of the atmosphere.

In February next, it would be advantageous to sow over each acre, a mixture comprised of five bushels of ashes, 1 bushel of plaster, and 1 bushel of salt.

To those who have been in the habit of cultivating rye on their poorest and most exhausted fields *without manure*, and then complaining, that though there were plenty of straw, there was but *little grain*, the idea of manuring rye may appear strange; but let us tell them, that a *good crop of grain*, whether of rye, or any other kind, cannot be grown on very poor land unaided by manure—some require more than others, but all need some.

Setting Timothy Meadows.

Those who may intend to set timothy meadows, should, before they undertake to do so, consider first, whether their land is fertile, and secondly, if it be not very fertile, make up their minds, that it is fallacious in them to attempt to grow large crops of timothy on such lands without treating them to large dressings of nutritive manures. They should consider too, that a crop, which from the length it will occupy the land, requires the most accurate ploughing and thorough pulverization; and that, in order to give to the roots of the plants ample pasturage, the ploughing must be deeply executed, so that in case of a dry season they may be enabled to derive moisture from below. Indeed, so well are we impressed with the efficacy of breaking the earth deeply, that, if the ground on which we were about to set a timothy meadow was *not wet*, we would, besides ploughing it 8 inches in depth, subsoil some 6 or 8 inches more, and we should look to be reimbursed for the cost of the

extra labor by increase in the produce of hay. It is an admitted fact among the most observant practical farmers in England, that great as the benefits are there arising from the improved modern practices in agriculture, none have produced greater advantages to the farmer than the use of the subsoil plough, on lands suited to its use, the soil being thereby doubled in value. To a great extent, the subsoiling of land has been as fruitful of benefits to the farmer, as trenching has to the market gardener. Subsoil ploughing has this advantage over trench-ploughing, the farmer only breaks the subsoil, but brings none of it to the surface, as does the latter: it opens the subsoil, to some extent, pulverizes it, places it within the meliorating influence of the sun, the air and the rain, without mingling any of it with the surface soil, and acts, to a considerable extent, as a drain to carry off superabundant water, as also, as a reservoir in dry seasons, from whence the plants may derive moisture, and thus protect themselves against the effects of the drought.

As to the Soil.—The most approved opinion, is that a moist—not wet—clay loam is the soil best adapted to the culture of timothy—though it will grow on any fertile loamy soil, and indeed on stiff tenacious clay, provided the previous preparation be thorough and perfect. In this latter opinion we speak from our own personal experience, having grown luxuriant crops of timothy for several years upon a lot, the soil of which most people would have concluded was only fit for making bricks, or to be used as puddling-clay; but which by dint of thorough preparation we converted into as prolific a timothy meadow as the eye of man ever beheld. On porous, gravelly soils, as well as on light sands, the timothy plant does not grow in luxuriance, nor is it lasting.

Preparation of the Soil.—Under the general head of setting timothy, we have spoken upon this subject very freely, but we will here remark, that lands intended for a timothy meadow, cannot be too thoroughly prepared. The soil should be carefully ploughed, without balks, to the depth of 6 or 8 inches, the latter depth preferable, and unless the soil be wet, it should be subsoiled also to a similar depth. It should be harrowed and rolled, until all the lumps were broken up, and the soil reduced to a perfect state of pulverization, as it is useless to sow timothy seed, or any other of the small grass seeds, on any soil not thus accurately and nicely prepared, as they can neither germinate, flourish, nor grow amidst clods and lumps, and must necessarily perish.

Manure and Manuring.—We prescribe the following kinds and quantities of manure, for an *acre* of land to be set in timothy:—

No. 1.—20 two-horse loads of stable and barn-yard manure, to be ploughed in.

No. 2.—20 bushels of bone-dust, 50 bushels of ashes, and 2 bushels of salt, to be mixed together, permitted to lie in pie ten days or two weeks, then shoveled over, sown broadcast over the ploughed ground, and harrowed in—the bone-dust to be moistened before being mixed with the other substances.

No. 3.—400 lbs. guano mixed with 1 bushel of plaster, and 2 bushels of salt, to be ploughed in.

No. 4.—3 two-horse loads of stable and barn-yard manure, 10 loads of woods-mould, or marsh mud, 200 lbs. of guano, and 1 bushel of plaster, to be formed into compost, mixed thoroughly together, spread broadcast, and ploughed in.

As lime is a manure in which all the grasses delight, if the soil has been long in culture, and not recently limed, or ashed, each acre should, the succeeding fall after being seeded, have 50 bushels of lime, or 50 bushels of ashes, or 100 bushels of marl applied per acre, harrowed in and the ground rolled.

Seed per acre.—If you wish a well set meadow, comparatively free from weeds, sow 1½ peck of seed per acre. Many sow but a peck, but we think the latter quantity too little.

Of the Seeding.—In the first place, be sure that you get good, well cleaned seed, and next, that the seed is equally distributed over the field, either by a skilful, careful pains-taking hand, or by a well regulated machine; by the latter plan, there is greater certainty of accuracy. As the seed is sown, let them be very lightly harrowed in, by a light harrow, the field being all sown and harrowed, lay off water-furrows, and finish by rolling across the furrows.

Some use the *bush harrow;* but this plan we do not approve of, as the bush is apt to drag seed, stones, and clods into heaps.

Now having pointed out to you how to set a timothy meadow, we will remark, that we spoke of setting the meadow in *timothy alone*, under the presumption, that you might intend the hay for sale, as timothy hay is most saleable in all the large markets. If, however, you wish to raise hay for your own consumption, and desire a good luxuriant pasture for your stock, after the hay shall have been cut, cured, and removed, then we would advise you to sow on *each acre*, the following seeds:—

1 peck of timothy seed,
1 bushel of orchard grass seed,
½ bushel Kentucky blue grass seed,
½ bushel tall meadow oat-grass seed,
3 lbs. sweet scented vernal grass seed, and
1 bushel of perennial rye grass seed.

By this combination of seeds, you will not only have a luxuriant crop of grass, each season for hay, but a fine pasture each year, from hay harvest, till late in the fall. *Timothy alone* is admirable for a hay crop, but makes an indifferent pasture.

The timothy seed should be sown alone; the orchard grass seed should be spread on a floor, moistened and suffered to lie 12 hours, then be mixed with twice its quantity of ashes, and well stirred, to separate the seed before being mixed with the other kinds.

After treatment of Meadows.—Every second year after being seeded they should be top-dressed with a mixture *per acre* of 5 bushels of ashes, 2 bushels of bone-dust, 2 bushels of salt and 1 bushel of plaster, which must be well mixed together, suffered to remain in pie 10 or 12 days, then spread broadcast, horrowed in, and the field rolled. The bones before being formed into pie must be moistened.

TURNIPS.

These may be put in up to the 10th of this month, or, indeed up to the 15th.

For the manner of putting them in, culture, &c., see our remarks of the last, and preceding month.

LATE POTATOES.

Keep these clean; give them a dressing, per acre, of 1 bushel of ashes, 1 bushel of salt, and 1 bushel of plaster.

PLOUGHING FOR WHEAT.

Permit us to remind you, that deep ploughing is conducive to the healthful growth of the wheat

plants, and to considerable extent, a protection against winter-killing; that deep ploughing combined with well formed water-furrows, the latter to be kept clean, are among the best agents to preserve the wheat crop from injury by alternate freezing and thawing during winter and early spring. Seeding the wheat in drills, is another protection against winter-killing, and being so, all who can, should put their wheat in with the drilling machine. Less seed is required, and a better yield the result. In England they horse-hoe drilled wheat, but here where labor is so dear, we must not mention it.

FENCES.

Carefully examine your entire line of fencing, and wherever repairs may be needed, have them made without delay, as short pastures will soon teach your own as well as your neighbor's stock to look out for the weak points in your fences.

GRANARIES.

Have your granaries thoroughly cleansed before you store away your grain. It is stated in an exchange paper that tar placed in a granary, will, by its odor drive off the weevil. If this be true, it is a valuable discovery. If the odor of ordinary tar is thus effective, we should think that gas tar would be more so.

POULTRY HOUSES.

These, at this season, should be frequently cleansed.

VALUE OF CHICKEN DUNG.

The speaking about the necessity of cleaning poultry houses, reminds us of a remark of that accurate analytic chemist, Dr. *Dana:* He estimates that the salts contained in the droppings of a single hen in a year, as being equal to those contained in 20 bushels of wheat.

STUBBLE FIELDS.

By sowing 2 bushels of ashes, 1 bushel of lime and 2 bushels of salt over each acre of land in stubble annually, you will improve the character of the herbage—benefit the land and destroy many insects.

SHEEP.

Attend to providing tar and salt for your sheep, in the way we pointed out last month. While the tar will protect them from the fly, the salt will give tone to their digestive organs, and preserve their health.

MILCH COWS AND TWO YEAR OLD HEIFERS.

If you have not a full-blooded Durham, Devon, or Ayrshire bull, provide one for your milch cows and two year old heifers, during this month, and thus effect two good results, viz: an improvement in your stock of cattle, and secondly the calving of your cows at a period when there will be good pasturage.

LATE CORN.

If your late corn has not received its last working, put your cultivators and hoemen into the fields without delay, in order that, when you do lay it by, there may be neither grass nor weeds therein to rebuke you for your slovenly culture

MATERIALS FOR MAKING MANURE.

It will be true economy to employ a hand and team during the next three months, in collecting materials for composting into manure. Creek mud, marsh-mud, river-mud, woods-mould and leaves, pine-shatters, the cleanings of your ditches, weeds, bushes, the scrapings of lanes, fence corners and sides, and of your yards, are all full of those elements which cause your crops to grow.

ORCHARDS.

If you have not cleaned the rough bark off the trunks of your fruit trees, and dressed them as we advised last month, do so this without delay.

BUSHES, BRIARS, SPROUTS, SHRUBS AND WEEDS.

This being the reputed best month for destroying these, go to work without delay, and destroy the whole tribe.

DRAINING.

Drain *your* wet lands, and thus prepare your land for deeper tillage and other improvements. By draining, and deep ploughing and judicious improvement of the soil, you may make one acre produce as much as two did formerly.

MD. STATE AGRICULTURAL SOCIETY.

The Quarterly Meeting of the Board of Managers will be held at the Hall of the Society, in Baltimore, on the *First Wednesday in August*, at 10 o'clock. As business of importance connected with the Annual Exhibition, may come before this meeting, a general attendance is desired.

By order of JAS. T. EARLE, President,

July 1. SAMUEL SANDS, Sec'ry.

THE CHILIAN GUANO FRAUD.

From the Country Gentleman.

The following letter, had it been sent direct to us, would have been published on the 14th inst.; but having been enclosed to a gentleman of this city, it failed to reach us in season for an earlier insertion. We hope our readers will give it an attentive perusal. It is a most remarkable letter. It was, we suppose, intended as a vindication. But it is a confession—such a confession as we had not anticipated receiving from one of the parties engaged in this transaction.

BOSTON, June 7, 1855.

To the Editors of the Country Gentleman:

My attention has been called, and I last evening for the first time saw several articles published in your paper in reference to what you please to term, fraudulent Guano.

I beg to inform you the article marked "Chilian Guano," is simply a mixture of Mexican and Peruvian guano, in about the proportions of three-fourths of the former and one-fourth of the latter, with 2 to 3 pr. ct. of sulphate of ammonia added. This is the whole extent of the fraud, if you can make it one. The price of Mexican guano is $25 per ton—that of Peruvian every one knows. The mixture I have authorized sold at $35, and am satisfied that every one who has bought it, has got an equvalent for his money, and further, will find by his results he has not been defrauded.

I was induced to have this mixture made from two motives. Last season several parties who applied Mexican and Peruvian guano, in the proportion of two-thirds of the former and one-third of the latter, reported better crops than where they used Peruvian guano along side by itself. Again, many farmers think a guano that has no smell, like the Mexican, is worthless, and will not buy it from its want of it. In this way they would learn to use and appreciate it after they had tried and understood it.

So far the only instance of unfavorable effect by the action of this mixture, is the one you cite from Petersburg. I feel confident that in the autumn I can give you satisfactory documentary evidence of its good effects.

I think you were unfortunate in the sample sent you for analysis, as it is entirely unlike some 8 or 10 different ones that have been made of it by other chemists.

I send you a printed copy of Dr. HAYES' analysis, that has been commented upon by you, by which you will perceive you were mistaken in saying he did not give the ammonia. You will find the percentage of ammonia given at the foot of each analysis.

The above are the simple facts of the whole matter. I ask, as an act of justice to me, that you publish this letter, with a request to those papers who have copied your articles, to do the same with this.

I trust your sense of justice to yourself will induce you to take back the charge of fraud in connection with this guano, when you see the money value of its component parts is fully equal to the price asked for it. I am, Sir, with due respect, yours, S. PHILO SHELTON.

Here we have an admission from one of the principal owners and venders, that the "Chilian Guano" is not an imported article—that it did not "come from the coast of Chili," but that it is a compound made in this country.

We trust farmers will appreciate the "motives" assigned by Mr. SHELTON for endeavoring to deceive them; and that the "eight or ten different" chemists who have been employed to analyse this "mixture," under the supposition that it was *genuine* "Chilian guano," will feel duly honored. Mr. S. says "this is the whole extent of the fraud, *if you can make it one.*" A fraud according to WEBSTER, is a deception; generally a deception in buying and selling. Mr. S. himself fully admits that he attempted to deceive "many farmers" by giving to Mexican guano a "smell" of ammonia and a false name, and even had we no other evidence of his connection with this business than his own letter, we should be warranted in charging him with "fraud," of however harmless a nature it might be. But unfortunately Mr. S. has only made a partial confession, and our intimate acquaintance with the whole manipulations of the manufacture of "Chilian guano," compels us to believe that the manufacturers of this article are guilty of a gross, systematic and unmitigated fraud. If it is a "simple mixture" of Peruvian and Mexican guano with a little sulphate of ammonia, as Mr. S. states, why was it not made in Boston. Why was it taken to Newark, *and from there three miles over a heavy road into the country?* Surely no business man, such as we suppose Mr. SHELTON to be, would incur the expense of freight from Boston and return and *six miles of heavy land carriage*, simply for the purpose of mixing Mexican and Peruvian guano and a little sulphate of ammonia together. We feel compelled to conclude that Mr. S. has confessed only part of the truth.

We have even still a lingering hope that Mr. S. is not as guilty as the actual manufacturer of the article. Mr. S. intended to deceive "many farmers,"—perhaps, as he states for their own good—and it may turn out that the person he engaged to *mix the articles together*, deceived *him*. He *most certainly did*, if Mr. S. thinks that the "Chilian guano" is compounded of the ingredients stated in the above letter. Mr. S. thinks we were "unfortunate in the sample sent us for analysis." We beg to assure him that we took both samples with our own hands, from a large quantity—some 200 tons,—of the Mexican and Chilian guano, from a warehouse in Newark, where it was brought direct from the factory. Furthermore we would again inform Mr. S. that whether he knows it or not, the "Chilian guano" is compounded of a very inferior Mexican guano,—as we were informed, furnished by "a Mr. SHELTON of Boston,"—of sugar-house scum, of salt and plaster, with the addition of a little Peruvian guano, and quick lime to set free the ammonia and give the "smell" desired by "many farmers." If Mr. S. does not credit this, let him proceed to Newark and investigate the matter as we have done, and he will be convinced of the truth of our assertions.

In regard to our statement that Dr. HAYES did not give the per centage of ammonia, we have to say that we copied the analyses from the *Oxford (Me.) Democrat*, the editor of which is agent for the Mexican and Chilian Guano, Mapes' superphosphates, &c., and whom we supposed well informed on the subject. *In these analyses the per centage of ammonia is not given.* We endeavored to get the original "printed copy of Dr. HAYES' analysis," but without success, and even in the one sent by Mr. SHELTON a portion seems to have been cut off from the bottom. We should be glad of a perfect copy, and will do Dr. HAYES full justice.

The correctness of our analysis of "Chilian guano," and of our estimate of its value, are confirmed by Mr. PLEASANTS and Mr REESE, the guano inspectors of Petersburg and Baltimore, both of whom made an analysis of the article; and furthermore, on the correctness of their analyses being called in question, the matter was referred to Dr. STEWART of Baltimore, who analysed the "Chilian guano," and decided it worth not more than $13 per ton, or two dollars per ton less than our estimate of its "outside value." Yet in the face of all this, Mr. S. would persuade us that the article is well worth $35 per ton! It would appear that the large quantity from which we took a portion for analysis, and also the cargoes sent to Petersburg and Baltimore, were all "unfortunate" samples of Chilian guano.

In pursuance of Mr. SHELTON's suggestion, we request those papers which have copied our previous articles, to publish also the foregoing.

CORN AND COB MEAL—WOOL—CUTTING UP CORN.

To the Editors of the American Farmer.

DEAR SIR:—In reply to the application of your correspondent, in the Farmer of this month, you may state that I continued to use the corn and cob mill, described by me some year or two ago, until a flood in the water course that propelled it, swept the whole contrivance away. I did not renew it, as the droughts of the two succeeding seasons so reduced my stream as to render it of little value, and, moreover, the increase of my stock has so augmented the demand for food, of the description furnished by this machine, that I am under the necessity of procuring one capable of furnishing a larger supply. One was sent me on trial last spring, which did its work well, but too slowly, and I am inclined to believe, from what I have been told by persons who have used it, that the "Little Giant," as it is styled, is preferable to all others.

As regards corn and cob meal, as food for horses, sheep and cattle, I consider it superior to all others, and the most economical I know of. Owing to the drought of last summer, which left us no after-math or fall pastures, to the severity and duration of the winter, and the cold and late spring, I was compelled, for the first time since I have

been engaged in agricultural pursuits, to resort to expedients to carry my stock through; and was indebted to corn and cob meal for my success. Of this, I fed about 10 bushels per day, which was more than equivalent to 20 bushels of corn, and enabled me to economise hay; as, by mixing it with cut straw, it has the effect of distending the animal, which corn alone has not, and of thus preserving them in health, as well as in flesh. I am persuaded this provender will come into general use, now that the means of procuring it, are afforded us, which has not hitherto been the case. In the meantime, if your correspondent has a steady stream of water, or the privilege of connecting the contrivance with the forebay of a mill, and does not require to grind over three or four bushels of corn in the four and twenty hours, I think he will find such a mill as I have described, enlarged as I have recommended it should be, to answer his purpose. I will probably put up another, if the late rains should restore, as they have not yet, the stream on which I was dependant for operating it. But it appears to me that the earth has been so exhausted of water, by the recent droughts, that years will be required to reinstate it. Wells, springs, runs, creeks and rivers are still at low ebb, notwithstanding we have had of late an unusually wet season, which however, does not appear to furnish a permanent supply to the streams.

There has been a considerable advance over last year's prices for fine wool, and likely, the dealers tell me, to be sustained for some time to come, as the number of sheep was very much diminished, in consequence of the scarcity and high prices of provender in the past season, many having been sold for slaughtering, and others perishing from disease and starvation. I did not lose more than is usual in large flocks, but they ate me out completely, and, what is worse, I was compelled to keep them on my meadows so late in the spring, in consequence of my wood ranges being retarded in vegetation by the backwardness of the season, that my crop of hay will be very much diminished thereby. Under these circumstances I would like to dispose of some three or four hundred ewes and wethers; so, if you have any inquiry for such, let me hear from you. The stock is superior, and in fine condition. The wool will grade super super, and sold this season at 50 cts. per lb.

The prospects of wheat with us are good, and I never saw such promise of corn and oats. The hay crop will be light, as our meadows are all turning to cheat and red-top. The former, cut green, makes excellent feed for stock—the latter sweet hay, but the yield per acre is small.

It would be more difficult to answer the inquiry of your other correspondent, who desires to know what capital would be required to operate a farm. Without being informed as to the extent thereof—the character of soil, the capacity for labor, or whether designed for grain or stock; I would not venture to give advice, which would, at best, be but founded on conjecture. There are men with us, who grow rich even on rented farms, but then they perform the labor themselves, with assistance of the members of their families, and by interchange of service with their neighbors; live very frugally, and work very hard. Indeed, the best of us, who are dependant on our land for livelihood, have a toilsome time of it, and know no rest but on the day of God's appointment. A man may begin on a farm with a small amount of moneyed capital, for the credit system will help him along, but his stock of industry, patience, perseverance and economy should be inexhaustible, and always in practice and at command.

I am not aware of any machine in use for cutting off, or cutting up, as we call the operation, corn; nor do I think this is likely to be compassed by machinery. The cutting might be managed, but the shocking and tying up are rather within the province of manipulation. But the cost is inconsiderable compared with the amount of provender obtained. I pay 3¼ cents per shock, the operators finding themselves, of ten hills square, in corn that will yield over 75 bushels per acre. In yours, which seldom exceeds 50 bushels, I should say 2½ cents for 12 hills square would be ample compensation to the cutter; indeed I know it would, for I pay too much. Many of my *employees* cut and set up 50 shocks per day, but they know I must have the fodder, and tax me accordingly. In husking, we tie it up in small bundles, say seven or eight to the shock, which is then doubled, which makes it more convenient to handle, or to load up on a wagon, when, as is frequently the case with me, it is to be hauled to a distance. It is also just right for the cutting box.

Ever yours,

W. B. B.

Ellendale, Va., July 1855.

AGRICULTURAL JOURNALS.

Cumberland Co., Va., 9th, July 1855.

To the Editors of the American Farmer.

Messrs. Editors:—With all deference for your better judgment and discretion, and with the highest appreciation of your efforts in the cause of agricultural progress and improvement, it has nevertheless occurred to me that your excellent journal might be made still more efficient and valuable, if its columns contained rather more of the ordinary details of *practical* farming. It is a lamentable fact, that there is still a large class of farmers in the country, and particularly Eastern Virginia, that has made little or no progress in agricultural reform and improvement. They are still following in the footsteps of their fathers,—still pursuing that ruinous system of culture, that has impoverished this once beautiful country, and left much of it a barren waste. It is very desirable to get up amongst this class of farmers a spirit of improvement, and to get them to abandon the old and adopt the new system of culture. Of the various means to be made use of in effecting this desirable end, the most easy and efficient, is the introduction of the agricultural paper. It is the agricultural paper, that is to be the pioneer in the great enterprize; and the first step to be taken, is to put one in the hands of every farmer. It is a lamentable fact that there is an universal want of reading and information existing in the class of farmers to which I allude, and their opinion and views are extremely narrow and contracted; notwithstanding agricultural papers are almost as numerous as the chinchbug, and as cheap as dirt, strange to say, not more than one in a dozen can be prevailed upon to take one; and those who do, are not much benefited by it. This results mainly from the want of the proper spirit and enterprise, but it is to be attributed in no small degree to the want of adaptation of much that is read, to the particular means, and an inability on the point to make a practical application of it. The details of most of your

agricultural writings are too complicated, and the means and facilities for a literal application of many of your theories and suggestions, are too deficient and too difficult of access, to enable them to adopt and carry them out. The consequence is, that most of your theories and suggestions are pronounced by them visionary and impracticable, and not the least effort is made to put them in practice; not only so, but your agricultural paper is often thrown down in disgust, and a prejudice is created against it, which it is intensely difficult ever to remove. What they want is something that they at least regard as more practical, and better adapted to their particular wants and means. Now, Sirs, there are in every section of the country a few sensible, practical farmers, whose experience would enable them to supply many valuable facts, which if collected and published, would effect an immense deal of good, and particularly so in producing a reaction in this part of our agricultural vineyard. And I would take the liberty of suggesting, that if you were to enlist the services of a goodly number of such farmers, and elicit from each an occasional contribution upon some subject connected with practical farming, you would thereby increase the usefulness, and add very much to the interest of your journal. Besides it would tend in a great measure to remove the unjust prejudices of many against what is termed "book-farming." It would convince them that practical men can and do write as well as theorists—that there is no incompatibility between enlightened theory and practical skill, and that the plough and the pen can be wielded with great skill and effect by the same hand. And in addition, I think that it would make your paper more acceptable to the farming classes generally, and particularly to that class to which I allude; and I think it the most efficient plan that can be adopted to enlist the attention, and teach the understandings of these benighted farmers.

I wish to be distinctly understood, that I do not mean in what I have said, to disparage in the least your valuable efforts, or to intimate that they are not practical. On the contrary, I know that they are eminently practical, and entirely applicable to a large class of your readers, who are more fortunately situated than many others. What I would have you do, is to serve up not quite so much of the same sort, but a greater variety, so as to meet the wants of all, and for this reason these contributions should be *short* and practical. A large majority of readers will not read a long article, however interesting and meritorious it may be, and this is more especially the case with the class of farmers for whose benefit I have taken up my pen.

The people in this part of Virginia are very conservative in their character, and all reforms and innovations are looked upon with distrust by them. For this reason your reform should not be too radical at first. In order to render them permanent, you should proceed cautiously, and step by step. The wilderness of error, ignorance and prejudice must be cleared away, before the light of science can penetrate the gloom, or the tender plant of reform take root.

I know that these remarks are not applicable to a large portion—perhaps a large majority of your readers, nor are they intended for those enlightened, liberal minded farmers who have already commenced, and are now vigorously pushing forward the great cause of agricultural progress and improvement. I wish to see the great masses of the people—the small farmers (and I am one of that class myself) aroused to the importance of reform. I want to see the class enlightened, well informed, liberal and practical. W. H.

A CRITICAL EXAMINATION OF DR. STEWART'S ARTICLE ON "NASCENT MANURES."

For the American Farmer.

About a year ago, Dr. Stewart made an analysis of a sample of Superphosphate of Lime from N. York, and as its result was considered by him very satisfactory, he accompanied it with some remarks highly recommending the article to the agricultural community. Subsequently, on this ground, his report was published, and, being printed on "flying leaves," soon spread over the whole State, getting into the hands of almost every farmer.

It was indeed a most unfortunate report to both: Dr. S. and the manufacturer; the former, positively disproving in it what he intended to prove, viz: the article to be a superphosphate; the latter offering to the public an article which, in spite of the chemist's recommendations and his own good faith in it, must be condemned by every man of chemical knowledge.

The fact is simply this: Dr. S. stated by analysis that the article does not contain sulphuric acid (or any other strong acid;) and as sulphuric acid (or any other acid) is the only agent capable of converting the phosphates into a superphosphate, he either proved his own analysis to be wrong, or the article to be sold under a false name.

Since that time Dr. S. seems to have become fully aware of the indispensability of sulphuric acid in the manufacture of commercial superphosphate of lime, and its consequently forming a never failing constituent of this article. We have at least to judge so from a recent communication of his to the American Farmer, headed "Nascent Manures," (in March number of that journal) in which he identifies superphosphate of lime with dissolved bones.

We thus frankly admit Dr. S's. most satisfactory change of opinion, respecting the necessary constitution of a superphosphate; but at the same time regret not to find in the above article that attention paid to its properties and mode of action which is most wanted. Let us hear his own words on this subject:

"The fact is, that dissolved bones are unmanageable as a manure in this country, (in England bi-phosphates are applied in solution) until reduced from a fluid to the form of a powder by the means of ivory black, guano, or some less valuable diluent; and the universal distribution of carbonates of lime, etc. in these, converts nearly all of the bi-phosphates into neutral nascent phosphates or sub-phosphates."

This sentence embraces a union of incorrectness and dangerous principles; the former being confined to the first, the dangerous principles to the latter half of it.

The "author of Nascent Manure" stands indeed quite alone in his belief:

"That dissolved bones are unmanageable as a manure in this country until reduced from a fluid to the form of a powder."

Contrary to this, every manufacturer, every chemist's analysis of superphosphate of lime will tell him that bones, or other phosphates, when most perfectly decomposed by sulphuric acid, do not form a fluid but a powder, which, as to dryness, fineness, cleanness, with one word: as to manageableness has no equal among manures. In the advertising columns of this journal, our read-

ers will find the analysis of a sample of superphosphate of this description; it represents a perfectly dry powder, composed of nothing else but the constituents of calcined bones, and that portion of sulphuric acid which was required for their decomposition.

And can it be otherwise? Is not the acid together with its water finely converted by this process into a solid substance: the hydrate of the sulphate of lime (plaster of paris,) which will perfectly dry up of itself!

If it should happen that the manufacturer applied a very weak acid, containing more than 31 per cent. of water, then the surplus of water will not enter the composition of solid plaster of Paris, and will consequently render the product more or less damp, or even semi-fluid. In this case the manufacturer may choose between two ways to bring the article to a proper consistency. The one is to dry it up, either by artificial heat, or by the rays of the sun; the other, to absorb the moisture by the addition of dry charcoal; charcoal being that material which has the greatest absorbent power for moisture, without exercising in any other way an influence on the constitution of the manufactured article to which it is added. Contrary to this, however, the author of Nascent Manures recommends drying up the article "by means of guano, or some less valuable diluent," and proceeds with giving an explanation of the necessary consequence of such an addition by saying: "and the universal distribution of carbonates of lime, etc. in these, converts nearly all of the bi-phosphates into neutral nascent phosphates or sub-phosphates."

It is astonishing to see the author of Nascent Manures rightly pointing out the consequences of his recommendations without feeling at once convinced of their being endangering. Indeed, the above sentence gives utterance to principles which, when carried out in practice, must become in the highest degree dangerous to the farming community. These principles not alone sanction the fraud perpetrated by unconscionable manufacturers of this article, and spend praise to the ignorance of another party; but may also seduce manufacturers of a really good article to change their plan of operation; and, what is the worst, deprive farmers almost wholly of the benefit of this manure.

To prove this, it will be necessary to say a few words of the chemical properties of a superphosphate, as well as of its mode of action.

Superphosphate of lime is made by adding, under some precautions, sulphuric acid to phosphate of lime (a combination of phosphoric acid and lime, as contained in bones, Mexican guano, mineral phosphoric, &c., and hence the different materials employed.) As soon as the above ingredients are brought in contact with each other, a lively chemical action ensues: sulphuric acid, being a very strong acid, and having a greater affinity (*) to lime than phosphoric acid, lays at once hold of a portion of the lime, which exists in combination with phosphoric acid, and forms with it the hydrate of the sulphate of lime, our common plaster of Paris, whilst on the other side the common phosphate of lime, thus deprived of a portion of its lime, is converted into a new compound, called bi-phosphate of lime, which relatively contains more of phosphoric acid and less of lime than the former. Superphosphate of lime is therefore an intimate mixture of plaster of Paris, and bi-phosphate of lime; its valuable properties, however' depend exclusively on the latter constituent, from the chemical character of which we have also to judge of its mode of action as a manure.

(*) "A greater appetite."

Bi-phosphate of lime is easily soluble in water, it contains phosphoric acid in a soluble form; but its most important feature is that, whenever it meets a strong base, e. g. lime, either in its caustic or carbonated state, it becomes reconverted into common phosphate of lime, by uniting again with that portion of lime from which it was formerly separated by means of sulphuric acid. On account of its solubility in water, it will therefore penetrate the soil intimately to which it is applied as a manure; but whilst in this act, it meets almost everywhere on its way with lime, which in the form of minute and invisible particles is present in, and uniformly diffused through all cultivated soils. The immediate consequence of these circumstances must be the re-production of common phosphate of lime in the very body of the soil itself.

By applying superphosphate of lime to a soil, we therefore re-produce a substance (common phosphate of lime) for the decomposition of which we have gone through all the trouble of the manufacture of the superphosphate; but we re-produce it in a state of *fineness* and uniformity of *distribution*, as it cannot be effected by any mechanical means. A fineness and distribution of a solid substance as is here effected, can *quasi* be considered a state of solution; it is certainly a fact that the substance in this condition cannot exercise any accountable resistance to the solvent power of water, especially not, if the water is impregnated with carbonic acid, or ammoniacal salts, as is the case in nature;—it will become dissolved and thus rendered assimilable.

Dr. Stewart agrees with the above in so far as he declares also, the re-produced common phosphate of lime (and not the manufactured bi-phosphate of lime) to be the active manure, viz: that substance which is assimilated by the plant; but in consideration of this, he fully contents himself with the simple re-production of the substance, instead of farther asking himself *how* and *where* this re-production should properly take place to become effective!

Upon the question "*where?*" we at once answer: on the soil itself to which the article is applied. Contrary to this, however, Dr. S. recommends drying up the prepared superphosphate by means of guano, or any other diluent containing carbonate of lime, and thus re-producing the common phosphate of lime in it before the manure is applied to the soil.

What is the necessary consequence of such a management? It is, that the uniform distribution of the re-produced common phosphate of lime becomes solely confined to the mass of the manure itself, or we will say, to 200 lbs. the quantity generally applied per acre; whilst, on the other side, if its re-production is allowed to take place in the body of the soil, the uniform distribution will extend through the whole field, or 200 lbs. of the applied manure will become uniformly distributed through 6 millions lbs. of earth, the quantity an acre of land (1 foot deep) contains.

Is this comparison not a plain illustration of the fact, that Dr. Stewart by his direction wholly sacrifices the benefit of the distribution which this manure will most satisfactorily effect when properly treated?

Upon the question "*how?*" we at once answer: by the lime contained in the soil, to which the article is applied. Contrary to this, Dr. S. recommends: by the lime contained in guano, or some less valuable diluent.

What will be the consequence of such a management again?

We all know that the particles of lime contained in guano vary in size, from that of small grains to lumps as big as a fist. The common phosphate of lime re-produced by these particles when they are brought in contact with bi-phosphate of lime, must necessarily assume this form, and can consequently not be regarded to exist in a state of great fineness. We also know, on the other side, that the lime contained in soils is present in the form of particles so minute that they are invisible to the eye of the observer; and that, therefore, the fineness of the particles of common phosphate of lime, re-produced by them in the body of the soil, must be in accordance with their own.

Is this comparison not a plain illustration of the fact, that Dr. S. by his direction, if not wholly, yet to a considerable extent, sacrifices the benefit to be derived from the state of fineness, in which the article is capable of producing the common phosphate of lime, when properly treated?

But the superiority of superphosphate of lime over all other manures, supplying phosphates, lies in its particular mode of *producing* and *distributing* the common phosphate of lime, and are not both these factors, as to their efficiency, sacrificed by Dr. Stewart's directions? I fear that the terms "nascent" or "allontropic" (*) cannot fully redress the mistake Dr. S. made in this respect. For these terms the "author of Nascent Manures" claims the merit of originality, and has used them frequently in his recent reports. I am far from criticizing these favorites of Dr. S. in this place, but for the purpose of showing their usefulness I cannot prevent giving the following illustration: Some time ago I met with a report of a sample of brown stuff, supposed to be guano, which attracted my particular attention, because the word "nascent" was used in it, thus indicating the writer to be an adherent to Dr. S.'s nomenclature. The report was as follows: An average sample of the above contained an abundance of "nascent phosphates," which will say: of phosphates "beginning to exist" in it, but which have as yet not made their appearance. Of normal phosphates it contains but two tenths of one per cent., the amount generally contained in humus, of which the above is a specimen.

Dr. Stewart next proceeds with giving a plausible mode of accounting for nitre beds, by saying:

"Lime and magnesia, while in the caustic state, are capable of converting sand into soluble silica; and this is perhaps one of the good effects of liming, especially when we consider the remarkable influence that soluble silica exerts in absorbing ammonia from the atmosphere, and also from ammoniacal manures."

And farther down:

"Well, this soluble silica gradually absorbs from the atmosphere the ammonia, for which it has a remarkable affinity."

And finally:

"Nearly or quite all of the nitric acid of commerce, was no doubt originally derived from ammonia in the order above referred to, for, if my theory as above stated is admitted, then every authority will sustain me in saying that old plaster contains ammonia, and this ammonia is converted into nitric acid on the wall."

Now, if we admit the action of caustic lime on sand to be such as pointed out by Dr. S. (which is the oldest view, but in no way an established fact,) and also admit the remarkable influence that soluble silica exerts in absorbing ammonia—it is still left to our consideration to account for the subsequent transformation of the attracted ammonia into nitric acid before the above theory (which was first started by Dr. John Davy, and M. Longchamp, and not by Dr. Stewart) can be called plausible. We know that nitric acid is formed whenever decaying organic bodies come in contact with a strong base, e. g. lime, in the presence of moisture and air. Here the predisposing affinity of the lime to nitric acid induces the nitrogen of the organic substance, in the moment of its elimination, to form *nitric acid*, and not *ammonia*, as would be the case if no strong base had been present. After this, the presence of nitrates in the plastering of old walls, must be attributed to the decomposition of organic matters contained in it, under the above circumstances.

On the other side, we are entirely destitute of giving a plausible reason for the transformation of ready formed ammonia into nitric acid in this place. This transformation can be effected, as we know, by directing a mixture of gaseous ammonia and oxygen through a red hot tube; also, by directing the gas of ammonia over red hot sesqui oxide of manganese; but these conditions are such as do not occur in nature.

In accordance with the above theory (which is not mine, but which seems the most proper) it may justly be supposed that guano acts differently on crops in different periods of time, so that during the first period of its action it supplies the plant with its ready formed ammonia (about 7 per cent.) and during the latter with nitrates, as formed by decomposition of its nitrigenized matter when brought in contact with the strong bases contained in the soil. This supposition is supported by the action of Chili saltpetre on crops, now extensively used as a substitute for guano.

It may finally be allowed to touch the admissibility of a reason which Dr. S. gives for proving that ammonia is the main instrument of the conveyance of Silica to the plant. He says as follows: "It was first supposed that potash was the vehicle for its conveyance to every part of the plant; but the modern idea, is, that ammonia is the main instrument of its conveyance; certain it is, that it (silicate of ammonia) loses its base at the instant of its deposition on the stem; and if potash were the base, then it would be necessary that the potash be carried back again to the earth, and the plant would be constantly embarrassed by excrementitious matter; whereas the ammonia being volatile evaporates, and leaves the glassy coating, or element of strength, on the surface of the stem."

Now, supposed that potash is the vehicle, and not ammonia, a proper explanation of the above process will be as follows:

The silicate of potash will enter the rootlet of the plant, but whilst ascending, meets with one or several organic acids, which are produced in all plants during their growth. The immediate consequence of this encounter must necessarily manifest itself in the isolation of silicic acid (ele-

(*) "Allotropic" is meant, as I suppose.

ment of strength) on the stem, whilst potash, in combination with the organic acid, ascends (what for carried back again to the earth as excrementitious matter?) and forms finally a most important constituent of the fruit; fruits, (grains) as we know, being famous for containing a large quantity of potash and little or none of silica.

CHAS. BICKELL, *of Baltimore.*

HORACE GREELY ON SUB-SOILING AND UNDER DRAINING.

We commend to notice the very sensible remarks of Horace Greely, on the subject of ploughing and underdraining. On questions political, Mr. Greely is to us, as "an Heathen man and a Publican." His agricultural pursuits, however, appear to cool the ardour of his fanaticism, and his sub-soil operations have struck a substratum of good hard sense, and exposed it to the genial influence of a wholesome atmosphere. As to the ploughing, his prevailing tendencies tempt him to "run that *rather* into the ground." Some centuries hence, we may be so thick on this continent as to find it necessary to plough the ground three to four feet deep; but just yet, we think it won't pay. On the subject of under draining, we think Mr. Greely is a—Philosopher.

Extract from Horace Greely's Address at the Agricultural Fair of Franklin County, Pa.

"The Plow, I say, is the perpetual argument and assurance of the progressive farmer. It has been greatly improved in our day, and is still undergoing rapid improvement. We no longer expect one plow to do all kinds of work—to break up swamp and weed Indian Corn. We have a different plow for each kind of work. I have myself half-a-dozen on my little place, and I have still fewer than I need. We shall yet have machines driven by steam or kindred power, and breaking up the earth to a depth of three or four feet at the rate of an acre per hour, as Grain and Hay are now cut by the best Mowers and Reapers. The work of improvement has barely begun, and I am confident and proud that our country is now foremost in improving the Plow; that we are doing more in this line than any other people. I think the general verdict at the London Exhibition of All Nations' Industry was that the American Plows were better as a whole than those of any other Nation—that they combined lightness and ease of draft with efficiency in a greater degree than those of any other people. The Sub-soil Plow has been greatly improved by us; the Prairie or Self-guiding Plow is a Yankee Notion, and the Michigan or double Plow, (cutting with one coulter the turf and turning over the sod to a depth of four inches, while the lower and larger share lifts six or eight inches of soil and lays it, finely pulverized, on the top of the buried sod.) And when the new self-regulating Yankee Wind-mill gets fairly to work, contracting its wind-opposing surface as the gale increases, and stopping entirely when the blow becomes a hurricane, I believe we shall have cheaper and better plowing yet.

"This has been a season of severe drouth. On every side we meet evidences of its ravages, and it is madness to pretend that the crop is not generally a short one. It is far within bounds to estimate the loss of our country from this year's drouth, at One Hundred Millions of Dollars—about half the entire cost of the Mexican War. Now it were needless to tell any intelligent farmer that there is water enough in the earth if the roots of plants could only run down to it. Give them a sufficient depth of mellow, rich soil, and they will draw their own water, no matter whether it rains or not. In short, we have lost more than a Hundred Millions this year, and we are losing more or less every year, because our farmers will not be persuaded to plow their lands deep enough.

"I suppose I need not tell farmers that water is the principal component of every living plant, and that there is just as much water in the world at one time as another, and enough at all times.—When there is least water in or upon our soils, there is most in the atmosphere. This upper sea is never dry, and is always fullest just when plants need water most. In the dryest and hottest season, it will deposit water freely on any sufficiently cold metallic or other tolerable smooth surface. Sage grandmothers may tell you that the pitcher would not sweat if there were no water inside of it, but they are mistaken; the outside of the pitcher would gather moisture just as it now does, by precipitation on a surface cooler than itself, if that surface could be kept cool enough. Let the contents of the pitcher be oil or lead the deposition of simple water on the outer surface will continue, provided that surface be kept cool enough.

"Here, then, is the basis of our urgent commendation of Deep Plowing, Sub-soiling and Draining. We want the soil kept loose and permeable to such a depth that the air passing over it may always freely traverse it and go down till it finds a degree of cold sufficient to cause a deposition of its water. Hence and not merely because roots strike deeper in deeper, mellow soils—our demand for Sub-soiling and Deep Plowing—two feet, if possible; but, at all events, somewhat deeper every time the soil is turned over.

"When I remark that we have had a season of uncommon drouth, and that the losses and failures thence resulting, should teach us to plow deeper, you readily comprehend, though you possibly may not agree with me; but when I add that it should also impress us with the importance of DRAINING, some of you will stare in bewilderment. "What! drain land to guard against drouth?" you inquire. Yes, Sirs; just exactly that! How often I have been told—"This land don't need draining—it is dry enough." "Yes, sir," I respond, it *does* need draining, though it is already too dry." Let me make myself understood:

"The atmosphere surrounding and embracing the earth is a great reservoir of moisture, which evaporation is constantly replenishing, and rains or snows occasionally making drafts upon. Let any current or body of air be brought into contact with a surface colder than itself, and it begins to deposit moisture or water thereon—witness the common sweating of a pitcher in a hot day. "Ah! the water sweats *through* the pitcher," says an objector, "a dry pitcher will never sweat." Yes, Sir, it *will* sweat, provided you can keep it long enough colder than the air which comes in contact with it. If you doubt this, and think the sweat on a pitcher was abstracted from the fluid inside, pray explain why a pitcher sweats only on hot days, or in a hot room. But the fact is beyond dispute.

"Now, a drain, whether made of tile (hollow brick), as it should be, or of stone, timber or oth-

er material, is a long tube discharging into a stream or at any place where a bank or declivity insures against back-water, running thence across the field to be drained, and terminating under a heap of loose stones at the upper side. If of tile, these are simply laid end to end in the bottom, with a sod reversed over them so as to cover each junction and prevent the introduction of earth. You need borrow no trouble about the water; all that the soil does not need will find its way into the drain and pass rapidly off to the outlet, provided there is a gradual though slight descent toward the mouth, no choking up at any point, and no back-water. All the surplus water above the drain will thus pass off with that for one or two rods on each side; but as you recede from the drain the area drained by it rises, so that a drain three feet under the surface will not drain away the water to a depth of more than two-and-a-half feet at a distance of a rod on either side, nor to a depth of more than two feet at a distance of two rods. (I do not pretend to accuracy in these details, but only to illustrate the principle.) As to depth, much must depend on the nature of the ground and the facility of avoiding back-water. My drains will not average three feet in depth, and I have some under two feet, because I cannot get drainage-way to a greater depth; but if I could go as deep as I choose, I should, while tile continue as dear as now, sink them four or five feet, for then I think they might be laid four rods apart in rocky, compact soils, and possibly five or six in loose dry soils. They ought not in general to be more rods apart than they are feet deep.

"Now such drains, well laid, will not merely keep the soil free from excessive moisture, but they will enable it to retain more water in a dry time by keeping it loose and porous, and by preventing the sub-soil, after being once plowed up, from being baked, or caked down again by stagnant water. There is not a dry lot on earth which would not, with proper plowing, be aided to resist drouth by draining. For each drain, made as I have indicated, with a vent at each end, is a funnel through which a current of air is constantly passing, and sending off jets in either direction through the crevices between the meeting tile. You need not be told that the atmosphere is the great reservoir of fertilizing substances—that carbon, which, next to water, is the principal constituent of nearly all plants, is obtained from the carbonic acid of the atmosphere, and that ammonia, the stimulant of vegetation, is but a modification of nitrogen, which is a principal ingredient of the air. Dig a cellar wherever you please, throwing out on the top earth which was never before within six feet of daylight; let it freeze and thaw one or two winters, and be visited by sun, wind and rain, and mark what a rank growth will cover its surface—the product not of the earth mainly, but of the atmosphere. So the air, constantly escaping from the current flowing through the tile, permeates the earth on every side, and imbues it with warmth and fertility.

"But I propose to show more especially how these drains protect land from drouth. I have already spoken of the sweating pitcher, the constant presence of water in the atmosphere, and the tendency of the air to deposit this water on coming in contact with a surface colder than itself. Now the surfaces of the drain are always in common with the earth surrounding the drain, colder throughout warm weather than the atmosphere above them. Of course, the air entering the drain from without is perpetually brought in contact with surfaces colder than itself, and perpetually depositing moisture in the adjacent soil.

"It is very well to make drains of stone where suitable stone are abundant, and the farmer wants to get rid of them. Where the soil beneath is solid and unyielding, and care is taken in laying and covering the stone, such drains may for years work even better than if made of tile, because they will draw more water from the soil and give it more air in return. But in swamps and marshy soils, where a tile-drain, laid on slabs placed flat side up, or on the poorest rough boards, will endure for many years, a stone drain will soon sink and become choked and useless. Besides, a stone-drain requires far more displacement of earth in making, and at least twice the labor in laying and covering. Let every farmer begin to drain at once, even with two poor boards or slabs for the top and bottom of each drain, and a smooth pole for each side; but he will soon realize the superior convenience and economy of the tile.

"I know well that tile are both scarce and dear at present—and we pay more dollars per thousand than the English do shillings, and probably get an inferior article at that. But this is a temporary grievance, which a constant and growing demand for tile would soon obviate."

From the Journal of the N. Y. State Agricultural Society.

GUANO.

A gentleman of Wilmington, Delaware, has given us the following account of the use of guano, under his own direction, as well as the experience of others, in the State of Delaware, which will be valuable to those who are desirous of experimenting with this fertilizer. No experiments can be satisfactory but those made with the *genuine* Guano. The gentlemen in Delaware are particular in securing the true article, and reliance therefore is to be placed upon their statements.

"I have postponed answering your queries with regard to guano, in order to submit them to some of the best farmers of this neighborhood, whom I was to meet yesterday. The general result of their answers, is, that the effect of guano is in inverse ratio to the richness of the soil. On the rich farms of Chester County, Pennsylvania, guano has not been much tried, as they have no need of it, and when tried, gave unsatisfactory results. On the contrary, on the naturally fertile land, but exhausted by injudicious cultivation, of our lower counties, it has produced very good and durable effects. Mr. Bryan Jackson, an intelligent agriculturist and practical farmer, informs me that an application of 300 pounds guano per acre produced on his place a crop of wheat equal to the one grown on the same land with seventeen cart loads of barn yard manure. He had the ground ploughed deep previously to spreading the guano, and had it covered by another shallow ploughing. He states that he obtained no results of guano for oats or barley. However, one of my neighbors gets good crops of oats on poor land in which he ploughs guano. I was also informed that a crop of corn of 70 bushels to the acre had been obtained on poor land from a mixture of guano and plaster, at the rate of a handful in each hill, put in before dropping the seed. This is only an hearsay. My own experience with this manure dates from ten or eleven years ago, when I tried it for wheat with very good results, and I obtained the best wheat where the most gu-

ano had been laid on. The next year, having a new grass field that had given a very short crop at the first cutting, I applied on twelve acres of it a top-dressing of one ton of Ichaboe guano, mixed with equal bulk of plaster. The result was, for the following year, a crop of upwards of two tons of hay to the acre on the twelve acres which had been top-dressed, while it was quite light on the part that had received nothing. Having top-dressed the remainder of the field in the same way, it became quite equal to the first part. I have had that field mowed or pastured six years before it was necessary to plough it again. Since then I am so satisfied with this fertilizer's efficacy that I do not experiment upon it. I use it in conjunction with stable manure, ploughing it down, except for rutabaga and other turnips, for which I cover it with a slight harrowing, and also for top-dressing wheat stubble, at the rate of 300 pounds per acre mixed with equal bulk of plaster. For this operation I wait rainy weather, in order to have the guano immediately washed in the ground. It is, however, desirable to have it performed early, in order to let the clover and other grass get strong enough to withstand the pernicious influence of winter.

"On the whole I think guano is most invaluable on exhausted soils to produce straw, fodders, &c., or to enable the farmer to increase his manure, but that when applied exclusively to the production of grain, without combining with it stable manure or green crops, as I believe is done in some parts of the country, it will ultimately *leave the lands in a worse state of exhaustion than ever.*

"The hay crop here will be short. The severity of last winter, after the drouth of the autumn, has been very hard on it, and the spring rains have come too late to restore it. Wheat has been much winter killed, but has improved in the spring."

The Horse.

SOMETHING ABOUT HORSES.

Point of a good Horse.—Zadok Pratt, in a late lecture on the Horse gives his opinion of what constitutes good points:—

He should be about fifteen and a half hands high; the head light, and clean made; wide between the nostrils, and the nostrils themselves large, transparent, and open; broad in the forehead; eyes prominent, clear, and sparkling; ears small, neatly set on; neck rather short, and well set up; large arm or shoulder, well thrown back, and high; withers arched and high; legs fine, flat, thin, and small boned; body round and rather light, though sufficiently large to afford substance when it is needed; full chest, affording play for the lungs; back short, with the hind quarters set on rather obliquely. Any one possessing a horse of this make and appearance, and weighing eleven or twelve hundred pounds, may rest assured he has a horse of all work, and a bargain well worth getting hold of.

Mr. Pratt is now seventy years of age, and has always been an admirer of fine horses, and is a competent judge. There are in Mr. P.'s Lecture many valuable hints. We give two or three:

Care of Horses.—No horse can endure labor all the time. A few months in pasture, after being high fed and worked for several years, will renew his energies, as stated periods of rest and recreation will preserve the vital energies of man unimpaired through a long life; and by a wise law of Providence, which is as beneficial to the beast as to the man, a horse will do more labor in the six days, than if he were worked the whole seven.

In reference to the peculiar excellence of the horses of New York, I might say, that I have driven a pair two hundred and forty miles in three days, or eighty miles per day, without injury.—Amongst the many hundreds, and perhaps thousands of drivers and teamsters in my employ, I had a slow moulded man by the name of Dana Brown, who drove for me some ten years, and always drew the largest loads in the same time, and with less fatigue to his horses, than any other driver I ever knew. His horses would look better on the same feed than those of any other, and they always appeared in good condition, while those in charge of others gave unmistakeable evidence of improper usage. Forty, fifty, and even sixty hundred weight has been drawn over the Catskill mountains with one pair of horses, and I am only doing him an act of justice to say, that he never wore out a lash, and hardly a snapper in the whole time. Whilst other teamsters had sick horses, his were always in good condition.—The whole number of teams I had in one year averaged in every three working days 2600 pounds to Prattville, and 3000 pounds to Catskill, a distance of thirty-six miles, making about two and a half millions of pounds in all. I mention these facts as illustrating the great benefit of a good management of horses, and of roads.

In feeding a horse, it should be remembered that corn has a tendency to make him slow, as may be witnessed in the slow moving corn-fed horse of Ohio. Oats are more suitable to develope all his qualities, and from ten to sixteen quarts per day should be given.

Age of Horses.—With regard to the natural longevity of a horse, nothing can be said with certainty. They have been known to live thirty or forty, and in some instances even sixty years, but ill usage frequently destroys them before they are nine or ten. I think that under ordinary circumstances, fourteen years would be a fair average.

Breaking.—Too much importance cannot be placed upon the judicious breaking and management of this noble animal. It should be like that of a child; by no other means can a horse be reduced to a cheerful and ready obedience. A sullen and dogged submission will result, it is true, from cruel and brutal treatment, but a prompt and eager response to the wish of a rider can he obtained by patient kindness. I think there are few horses sulky by nature, and I believe most are made so by drivers, who are blessed with far less brains than the horse himself.

Change the Blood.—There is one thing to be remembered, however, in obtaining good horses, which must receive attention, or the stock will inevitably depreciate. It is, that the same horse should never remain in the same locality more than four or five years at the farthest. The constant mingling together of the same blood in the human family, tends to both physical and mental depreciation, as is peculiarly illustrated in some of the old crowned heads and aristocracy of Europe.

☞ A communication from Major Jones of Delaware, and suggestions as to statistics of Wheat crop and price current of past years, we are sorry to say, are too late to receive attention this month.

Reported for the American Farmer.

RESULT OF A TRIAL BETWEEN HUSSEY'S AND McCORMICK'S REAPING MACHINES AND ATKINS' SELF-RAKING REAPER.

Early in July, I sent for a machine of Atkins', for the purpose of testing it in wheat, but not having been able to give it a fair trial on account of the uneven manner in which the grain ripened, I determined to run it in a hilly and rather stony field of oats, running at the same time one of Hussey's, which had been on the farm for some three years, and which had lately been put in thorough repair by Mr. Hussey. The oats were very good, the field averaging forty bushels per acre.

On Friday, July 13th, a notice was inserted in the Sun, inviting all persons interested to attend, and on the 14th, Mr. Hussey's Agent was personally notified. On the same day, Mr. Rhodes, Agent, requested permission to send out one of McCormick's machines, which was accorded him.

On Monday, the 16th, the three reapers, worked by the hands and mules of the farm, were put into the field, and after starting, their manner of working gave great satisfaction and excited much admiration among the spectators, who numbered about forty. McCormick's cut from the commencement, steadily and well during the day—Hussey's, where it was stony, slipped a little and skipped on account of the smallness of the wheel; but with this exception worked exceedingly well—Atkins' did not start with the others, not having been properly put together; some alterations were made under the superintendence of Mr. Goldsborough, Agent, after which it started and cut excellently.

Those gentlemen present, who examined the machines most particularly, agree, "that the execution of all three was most satisfactory. It was impossible to say which cut the cleanest, the closest to the ground, or did the best execution in down grain. That for lightness, the preference was due to Mr. Hussey's. After working for some time with four mules, the leaders were detached, and each Reaper worked with one pair. In going up hill, the pair attached to Hussey's certainly labored least—they carried it up easily. [This machine had no front wheels. They had been tried last year, but were discarded as making the draught much heavier.]

"That for compactness and solidity of machinery, the preference was due to Hussey's. The motion in all three Reapers is produced in almost exactly the same manner. In Hussey's, the machinery is thrown nearer the ground, and the knife is worked in front of it; in McCormick's, the knife is worked in the rear; and in Atkins', on the side. The driving wheel of Atkins' is much the largest, which is an advantage. If properly cast and finished, there can be but little choice. All three are well balanced. Hussey's has a little advantage over McCormick's in going up hill, as the weight is thrown slightly forward, while, in McCormick's, it is rather in the rear of the machinery. This was somewhat increased by taking the driver from his seat, where his weight made the balance more perfect, to put him on the saddle mule where he could better manage his team.

The extreme width of Hussey's is		8ft. 10 in.
	its swarth,	5ft. 2 in.
do do	of McCormick's,	9ft. 10 in.
	its swarth,	5ft. 6 in.
do do	of Atkins',	10ft. 2 in.
	its swarth,	5ft. 3 in.

There is but little difference in the width of the swarth, while the difference in the size enables Hussey's to go through any farm gate. For McCormick's, however, and especially for Atkins', it is often necessary to tear down a part of a fence.

"That for the cutting apparatus, both McCormick's and Atkins' were superior to Hussey's. Both McCormick's and Atkins' knives worked beautifully, McCormick's being entitled to the preference, being quite as effective and less liable to breakage. Both these knives started in any position, worked off evenly and well, and did their work capitally in heavy grain, requiring no increase of speed. The knives of Hussey's take in so much grain, that where the crop is heavy, they sometimes choke, unless the team be driven at an increased speed, to produce a quicker motion. In starting too, after stopping, it is necessary to back the machine a little, to bring the knives well into play before they touch the grain.

"That the manner of elevating and lowering the platform, accomplished in McCormick's and Atkins', by very simple machinery, is preferable to Hussey's, whose platform is lowered by changing the wheel, an extra one being provided for the purpose.

"That the self-raking attachment of Atkins' gives it a very decided superiority over the two others. This in fact was the great attraction of the day. The motion of the self-raking arm, ingenious and simple, adds very little to the draught of the machine, which was certainly not as heavy as Hussey's with front wheels attached. It gathered its bundles, steadily and precisely, and deposited them at regular intervals on the outside of the machine, without any increased shattering, and very little derangement of the straw; so that the sheaves could be bound at once in a very even form; thus saving the labor of two men at least. McCormick's has also the advantage of a side delivery, effected by the aid of a raker, who stands in a most uncomfortable position, and who cannot avoid somewhat deranging the straw. A side delivery can also be procured from Hussey's machine, by placing two men upon it, which adds weight, and is very inconvenient. Its natural delivery is in the rear, and when worked in this way, it surpasses even Atkins' in the evenness with which the grain is delivered; but several additional hands are required to remove the bundles, that they may not be trampled upon by the team on the next round.

Both Atkins' and McCormick's machines are provided with reels, which are of great advantage in bringing the grain up to their less pointed knives. Mr. Hussey has dispensed with this, and possibly his different style of knife renders it unnecessary.

The three machines cut in six to seven hours 36 acres of oats, there being but little difference in the quantity of work done by each.

The labor saved by Atkins' Reaper must at once decide in its favor. In harvest time when labor is always scarce, one hand with a team of horses and this machine can cut fifteen to twenty acres of grain per diem, while the farmer can employ the balance of his force in threshing and preparing for market.

JOHN GLENN.

Balt. Co., July 26, 1855.

Dyspepsia.—Lactic acid, in doses of 20 drops, to be taken in half an ounce of water, is reported to be highly useful in those forms of dyspepsia, which resist alkalies. It deserves trial.

The Family Circle.

HOME MADE MEN.—Mr. Edward Bates, one of the most eminent lawyers and wisest statesmen of the west, thus wrote a few days since to a committee of the Missouri Legislature who invited him to become a candidate for the United States Senate:

"My habits are retired and domestic, and all my sources of happiness are at home."

Well indeed was it for him that it was so, and well indeed for others. Mark the difference between the influence of the home made character and that which is made out of doors! History with its coarse pen dwells, it is true, almost exclusively on the latter class, but in that great book in which the incidents of all real life are written, how predominant will be the former! The example of gentle tenderness at the fire-side,—of manly and yet delicate adherence to truth,—of severe honesty in private business,—when coupled with such eminent success as that of Mr. Bates, tells on the community far more effectually than the dashing exploits of the General or the brilliant oratory of the Senator. Viewed either in a personal or a public light, the history of the home made man stands in strong relief. "I have watched two races of politicians to the grave," said a late eminent judge, "and I have seen nothing but vanity and wretchedness." It is the fashion, it is true, to sneer at the "slow" dulness of merely home life. But it is by the fire-side that practical genius —that genius which helps itself while helping others—takes its origin. Watt was watching the pot boiling in the chimney when the action of the steam on the lid brought gradually home to him the great discovery which immortalised his name. And this, indeed, may be taken as an apt illustration of that wonderful influence which radiates from the centre-table where the children are gathered together under the light of the astral lamp, and which leads to these signal discoveries by the young philosopher—how self-conquest is the greatest of all conquests—how loving others is the best way of loving self—and how the HOME MADE heart is the only heart which, by being independent of the world, makes the world both its servant and its beneficiary. And then while home becomes thus the best representation of heaven on earth, it becomes the best preparation on earth for heaven. The worldly man has no points—we speak with reverence—at which divine grace can reach him. Take away the object of his ambition, and he is soured; add to it and he becomes intoxicated. Send him sickness, and he only writhes like the wounded snake. But the unsealing of the home-heart by cutting off its earthly objects of love, turns the fountain of that love direct to heaven. The bereaved soul looks its Heavenly parent in the face all the more clearly because of his chastisement. Sacred indeed then is that hearth-fire whose presence gives happiness on earth, and even whose extinguishment serves to open the vision to the eternal glory of heaven!—*Episcopal Recorder.*

THE FEMALE MIND.—The influence of the female mind over the stronger mind of man, is greater, perhaps, than many are willing to acknowledge. Its operations are various, and some men struggle fearfully to disengage themselves from it. But this we believe, that more or less, all men have felt its power; and those perhaps have experienced it to the greatest extent who would have it supposed they despised it most. A woman loses many of her charms, and consequently, much of her power in the opinion of many, when she ranges herself on the side of that which is wrong; while it is impossible to calculate the influence of virtuous women, when that influence is exercised with tenderness and modesty. The ruin produced by a bad woman may be sudden and violent, and compared to the bursting of a volcano, or the overflowing of the ocean; but the influences of a virtuous woman are like the gentle dew and morning showers, which descend silently and softly, and are known only by their effects in the smiling aspect of the valleys and the weight of the autumnal branches.

CHEERFULNESS.—If you would keep spring in your heart learn to sing. There is more merit in melody than most people have any idea of. A cobbler who smoothes his wax-ends with a song, will do as much work in a day as a cordwainer given to ill-nature and fretting would effect in a week. Songs are like sunshine—they run to cheerfulness, and so fill the bosom with such buoyancy, that for the time being you feel like a yard of June air, or a meadow full of bobolinks.

A TRIBUTE TO A FRIEND.—We indulge our correspondent, W. B. B. in giving his tribute to *his* and *our* friend; the characteristics delineated will be recognized by many who knew the man, and whose loss to our city and State, so soon after the ermine was placed upon his shoulders, has been so universally lamented.

A FRIEND.

Extinctus Amabitur idem.

His was not the capricious and ephemeral breath that had fanned me in prosperity, for, when I was prosperous, we were as strangers to each other; but his noble and disinterested regard came, as the sweet and unlooked-for air of the South to the asperities of winter, to temper the dreary season of my existence—to keep alive the promise of more genial days which, without this alleviation, might have been extinguished forever. The summer companions had departed with the sunshine that warmed them into animation—when the revel was at an end, and the hall deserted, and, but for his generous solicitude, which encouraged to exertion while it aided in accomplishment, I might have buried in the wilderness, to which adverse circumstances had consigned me, my hopes, my aspirations and my destiny. What marvel then, that, on the revolving anniversary of an event, which thousands deplore no less than myself, memory should become garrulous, and the heart, unable to repress its emotions, and denied communion with kindred sensibilities, resort to such expedient as this to interchange with them its cherished sympathies and regrets.

W. B. B.

FEBRUARY 8th, 1855.

TO FATTEN FOWLS.—The best food for fattening fowls is potatoes mixed with meal.—Boil the potatoes and mash them fine while they are hot, and mix the meal with them just before it is presented. They fatten on this diet in less than half the time they do on corn.

AMERICAN FARMER.

Baltimore, August 1, 1855.

TERMS OF THE AMERICAN FARMER.

Per Annum, $1 in advance—6 copies for $5—13 copies for $10—30 copies for $20.

ADVERTISEMENTS.—For 1 square of 8 lines, for each insertion, $1—1 square per annum, $10—larger advertisements in proportion—for a page, $100 per annum; a single insertion, $15, and $12 50 for each subsequent insertion, not exceeding five. Address,

S. SANDS & WORTHINGTON,
Publishers of the "American Farmer,"
At the *State Agricultural Society's Rooms*, 128 Baltimore-st.
Over the "American Office," 5th door from North-st.

GUANO—CHANGE IN PRICE—OUR AGENCY.

After our July No. was issued, we learned that Messrs. Barreda & Bro., the Agents of the Peruvian Government for the sale of Guano in this country, had made an important change in the price and terms of the article. We intimated in our June No. that an advance was in contemplation, and if the orders of the Peruvian Government were literally carried out, the price would then be advanced—but we had reason to believe that the Agents were endeavoring to have those orders countermanded. We gave this hint, supposing that the farmers would, as far as possible, take advantage of it, and secure their supplies in time, as it was very distinctly understood, that in no event would the price decline during the present year.

The following are the present rates of Messrs. Barreda & Bro., viz:

31 to 200 tons,	$55 per ton of 2,240 lbs.,	1 pr. cent. off.
250 to 500 tons,	$53 per ton	"	"
750 to 1,000 tons,	$51 per ton	"	"
Over 1,250 tons,	$50 per ton	"	"

In order that the farmer and planter might be able to obtain his supplies at the lowest rates, we immediately made our arrangements by which we were enabled to announce that we could furnish the article at about the same rates as heretofore, if the farmers would sustain our Agency, and we are happy to announce that our anticipations have been realized. For our terms, as now established, reference is made to our advertisement on another page, by which it will be seen that we can deliver the best No. A. Peruvian at $52 per ton, in any part of the city—or if taken from the Guano wharf, a deduction will be made for the saving of cartage. We have no hesitation in expressing the belief that but for this arrangement of ours, the ruling price would now be not less than $55 per ton. So long as there are supplies in first hands, and the rates now established by the Agents are continued, these will be our terms—but we have reasons for advising those who intend using the article, to obtain their supplies as early as they can—*Of* and we wish it to be distinctly understood, that all orders, at present rates, must *be paid for and delivered before the 1st of September*—or if paid for, can be stored at the expense of the purchaser. We will at present make no contracts beyond the 31st of August.

THE NEXT EXHIBITION OF THE MARYLAND STATE AGRICULTURAL SOCIETY.

We would call the attention of the Farmers and Planters of Maryland and the adjacent States, to the consideration of the importance of preparing for the coming Show of our State Society. In every direction, among our sister States, the note of preparation is being sounded, for their respective exhibitions, and we flatter ourselves that the old Maryland line will not be found lagging in the race for supremacy. Many of the State Societies have been brought into existence through our instrumentality or example, and the indications we have witnessed, induces us to stir up our people to renewed energy, if we do not wish to be left behind in the glorious civil strife in which we are engaged. They should begin at once to make their arrangements to be present, and to bring their wives and daughters and sons with them, to partake with us in the interesting and exciting scenes which are in prospect at the next exhibition.—There is every disposition on the part of the officers of the Society, to offer greater inducements to insure a more general display, and a larger attendance, than has ever before been presented—the season is more propitious than that of the last, and the general healthy tone which is manifested in the hopes and prospects of the farmers of the State, gives reason to anticipate that the coming Exhibition will be considered a suitable occasion for a general Jubilee.

There is no Society in the Union more admirably located than ours—in the very centre of the Union, with facilities of intercourse both by land and water, by which stock and passengers can be brought together from numerous States, with greater safety and ease than those possessed by any other Society—if the farmers of our own State will only take the initiatory steps to sustain us, we can produce an Exhibition unequalled by any other Society in the United States. We hope, then, that State pride, added to a proper appreciation of the character which our landholders ought to feel proud in sustaining, will cause a general stirring up among us, to strive which county of our State shall be best represented on the occasion.

The gentlemen who have been honored with the appointment as officers of the Society, for the several counties, are in an especial manner called upon to use every effort to induce their county men, and women also, to have something to offer for the liberal premiums of the Society, and to swell the list of our members to a greater extent than it has heretofore attained.

We would also call upon all manufacturers and inventors of Agricultural Machinery, to make preparation for visiting our city on the occasion—there is no point at which any thing in this line can be presented, of greater importance than Baltimore. Here is the grand focus for the exhibition of Agricultural Implements, and a wider field for the dis-

position of really useful articles, than can be found elsewhere. Let every one, then, who has any thing which he wishes to bring before the farmers of the country, be on hand on the coming occasion.

We in a special manner, invite the ladies to take a more active part in the Household Department of the show than they have hitherto manifested. There must be some cause why this department has failed to receive that due share of attention which has been enjoyed by other branches of our exhibitions; whatever the cause, it should be speedily remedied—for without the aid of lovely woman, and the encouragement which is bestowed by her countenance—we never can realize the full fruition of our efforts. Our own opinion has ever been, that if a more liberal list of premiums were offered in this branch, and the privilege granted for any lady to contribute to it, whether or not entitled as by the present rules, that thousands would be induced to visit our Shows, where hundreds only now grace our grounds with their presence—and let us get the women there, and the men are bound to follow. So confident are we of the policy of this course, that could our influence effect it we would tender a season ticket to every lady who would present any article of her own handiwork or production, worthy of having a place in the Exhibition. The result on the attendance, and receipts of our Mechanic's Institute Fairs, has clearly demonstrated to our minds, that the suggestions we have made upon this subject, point to the true policy of our Society.

In this connection we would remark that the Mechanic's Institute has announced the opening of its Annual Exhibition for October, and it will be in full operation during the week of our Show. We learn that the efforts making this year, will secure a more imposing display than has ever before graced their splendid Hall.

ONLY A "PIOUS FRAUD."

☞ The vender of *Chilian Guano* at Boston, Mr. Philo Shelton, (Philosopher Felton we suppose it is, for he makes a cool confession,) writes to the *Country Gentleman*, as will be seen by his letter on another page, that the *Chilian Guano* fraud is only a *pious* fraud, intended to cheat Farmers for their good. He insists on it that it is a better article decidedly than either wooden hams or nutmegs. His customers did not appreciate Mexican Guano, which he knew to be a valuable manure, and he concluded to add Peruvian enough to give it a "strong smell,"—strong smells and dark colors being potent signs of merit in Yankeedom. Unluckily the *strong smell* put a certain *Country Gentleman* on the scent, and he has been tracking this *Chilian Guano* from Boston to Newark—thence by wagon road, three miles into the country, to the retreat of another distinguished philosopher, and back, until the foreigner has got so thoroughly naturalized, that a Massachusetts General Court ought to be satisfied. Indeed the *Country Gentleman* insists on it, that the stuff is strictly *Native American*, and that *Chilian Guano* is composed majnly of the scum and refuse of a product of that most unchristian State of Louisiana. This is incredible. It is past belief that a pious Boston Merchant, who only cheats his customers for their good, should transgress to the extent of encouraging slave labor!

After all, this *Chilian Guano* affair might be a very good thing if common Christians were not such Fogies that they cannot appreciate it. It is only a manifestation of the Massachusetts Code, the *higher law*. Common Christians go by the Bible, but the *Higher law* of a Pharisee's conscience says to the Bible, "stand by, for I am holier than thou," while the Pharisee himself, wise above what is written, rolls his pious eyes to Heaven, thanking God that he "is not as other men." The Christian Scriptures say, "lie not one to another." "Speak every man truth with his neighbor"—the *Higher Law* says, "lie not to your neighbor, unless you can thereby do him a service." The Scriptures say, "Sin is the transgression of the law"—the *Higher Law* says, "Yes, provided I approve the law." St. Paul wrote to Philemon, a slave-holder, his "dearly beloved brother," by the hand of Onesimus, his fugitive slave, explaining to him how the latter, under his Christian teaching, having come to a knowledge of his duty, desired to return to him, and beseeching him for his sake to receive him. The *Higher Law* Pharisee, when he robs the master of his property, and kills him in pursuit of it, thinks he is "doing God service." The Scriptures speak of an "evil" conscience, a "defiled" conscience, but whether evil or defiled, it is the Pharisee's *Higher law*, because it is *his conscience*.

OUR CIRCULATION.

Our intelligent, well dressed, and highly respectable friend, the *Country Gentleman*, published at Albany, by Luther Tucker, commends us on this wise: "Those who want a good, sound, readable and reliable Southern Agricultural Journal, will obtain it by sending for the *American Farmer*." We make our best bow to the Country Gentleman, and confess to the soft impeachment. We are *Southern*, and all the rest. We are Southern in position, Southern in feeling, and Southern in *utter detestation* of the *isms* which cannot grow in Southern soil, and so abound, we are sorry to say in the *diggings* of some of our Northern cotemporaries. But in our *circulation* we assure our friend, we are decidedly National. We find in his business notice he thinks he has "a wider circulation than any other paper of his class." We don't know what he calls *wide*, but the *American Farmer* is this day teaching agriculture up in New Hampshire, Vermont, New York; all down the Atlantic board to the Gulf, and then stretches off back through some thirty little States and Territories,

to Oregon and California—stopping at all intermediate places, and mixing with all intermediate people (except Brigham Young and his Mormons—a set of infidels and outlaws, whom we don't patronize.) If the *Country Gentleman* goes any *wider* than that, we give him over to King Alexander and the Sandwichers.

P. S. We have given the Country Gentleman some idea of the extent of our circulation. A letter just received, suggests to us to give him a taste of its quality. A friend from Albemarle, Virginia, writes—"Absence from home is the only excuse I have to offer for not having remitted my subscription for the Farmer for another year. My wife says, 'take it, for it is worth five times the subscription, for the garden alone.'" Observe now, the husband sends his subscription money within two weeks of the beginning of the volume, apologising for not having sent it sooner. That's a specimen of our subscribers. Not that they are *all* just so—some of them, poor fellows, don't let their wives know that they owe us a dollar, and some have no wives, and are to be pitied, and some *forget*. We think, however, that these are all subject to the influence of a good example, and are expecting to hear from them shortly. But not only does the husband apologise for the little delay, but the gentle wife thinks it worth her while to commend his apology, by sending us a flattering compliment to our poor labors. That's a specimen of our subscribers' wives. If we were disposed to grumble at some of our bachelor friends and others for not *paying up*, we should let them off for the present.

☞ It will be seen that our correspondent W. H., while he appreciates the character of our paper gives us a friendly suggestion as to the matter of short practical articles—and we are glad to find that he means to follow up the suggestion by furnishing us occasionally such articles as suit the case. This is the only remedy—it is impossible that the editor of a paper can publish such articles, unless intelligent, practical men will write them—and we call on our friends, as we have done, to give us more aid in this way.

As to the men who *won't* read, we let them alone. We have not time to stop to coax, and won't vainly attempt to instruct them. One of them recently accosted in our presence to subscribe to our paper, tapped his head complacently, and said *he had it all there*. If Moses aad the Prophets had written on agriculture, such men would not hear them.

But there are many such as are described by our correspondent, who would be, and are interested and instructed by practical details, and are interested by little else,—we hope to meet the wants of such, and to bring them on in the path of improvement.

The mass of our readers, however, are reading and thinking, as well as working men—and men of progress and improvement—and we confess that they have our chief sympathies. We aim to go along with them, cheering and animating and working with them. They are the men who will give to the car of progress such an impetus, that the Fogies will be dragged along in spite of themselves.

☞ The Editor of the Southern Planter in an able article on the wheat crop, advises farmers to hold back their crops and not run them too rapidly into market. The Editor says, however, that he means to sell his own early, but wishes it expressly understood that it is only because his subscribers don't pay their bills. It *is* a hard case that a man should have to sell his wheat at a disadvantage, but not so bad by half, as having no wheat to sell. We fear our cotemporary has made a mistake in the matter. It is not to be supposed that people are going to trouble themselves to pay bills to an Editor who has a crop of wheat, even if he gets *but* $2 a bushel for it. Let no one suppose that *we* have any wheat to sell. The *Planter* is rather sharp on that class of its *patrons* that don't *pay up*. Let him have patience: they are a better people maybe than he thinks. We have had the same hard thoughts—and looking at our list, would think the man who *owed* us the largest amount was the worst man there; but when he finally came in and paid up, and became the man who *paid* us the largest amount—not one dollar, but four, or five, or six dollars—he advanced in our estimation marvellously. We are expecting to hear shortly from a few of this sort, and hope they will come on, we shall be very glad to see them.

P. S.—Since writing the above, one of these friends has sent us $3 for himself, and makes up a five dollar note with two new subscribers—very good idea.

BOOKS.

We have received from the Publishers C. M. Saxton & Co., New York, a copy of a new edition of Downing's "Landscape Gardening and Rural Architecture." This work, with others of Downing's, has had a marked influence in producing and cultivating a refined taste in Rural Agriculture and embellishment. We are glad to see it has reached a fifth edition.

Also, two of Saxton's Rural Hand Books. One "Every Lady her own Flower Gardener," an excellent little book with complete and full directions for the management of the Flower Garden. The other, the "American Kitchen Gardener," Fessenden's valuable treatise on the management of vegetables and garden products—revised from 35th edition. Price only 50 cents each.

We acknowledge the receipt for the "Maryland State Agricultural Society," of Transactions of the "Connecticut State Agricultural Society," an instructing volume of more than three hundred pages.

Also for the same, five volumes of Transactions of "Michigan State Agricultural Society"—and five vols. of Ohio Agricultural Reports.

THE HAND AND THE EYE.

A venerable friend in Montgomery County, Maryland, writes:

"Can you not do good through the columns of your very valuable periodical, in exciting farmers to do more labour with their own hands—especially the younger ones. It will inspire the farm hands to make greater exertions, and reconcile them to labor, when they see the owner or master fears not labor himself, nor does not consider it disgraceful."

The day for considering any work disgraceful that pertains to their calling, has passed we hope with all true farmers. We agree with our correspondent fully, that the "younger ones," especially, should do more work with their own hands, than they perhaps ordinarily do. The value of the labor is something, the influence of the example upon those under them is something more, the vigor and strength of body which moderate labor give are not to be despised. But it is not for these alone, valuable as they all are. It is rather for the training that the young farmer thus gets in the various processes of his art—that knowledge and *in-sight* which in no other way he can get—the information which the *cunning right hand*, gives even to the thinking mind, which gives its chief value to the labor done by young farmers.

Yet, that "the *eye* of the master is worth both his hands," is a wise saying. There is no substitute for the practised eye of the skilful master. It is the overseer of overseers. The conduct of laborers and employees, the grounds, crops, stock, all the various processes and operations of the farm, must come under its frequent supervision. It must be everywhere, watching, prying, examining, and he whose eye is faithfully occupied, will find ordinarily little time to employ his hands. But let the young man remember that the eye learns many of its best lessons through the operations of the hands. And with the man of experience it will happen as with the commanding officer who finds times and occasions when he must be sword in hand, in the thickest of the fight—and what if he has never learned to fight?

LIEUT. MAURY'S COMMUNICATION.

We present our readers in this No. with the communication of Lieut. Maury, promised in our last. Its suggestions come from a source which will command the attention of all intelligent men, and enlist the co-operation of the friends of Agricultural improvement. It will be found, we think, that Farmers are not to be outdone by Sailors in appreciation of the advantage that may be realized from a more intimate acquaintance with the influences which surround them in the atmosphere—a knowledge which can only be obtained by the method Mr. Maury suggests.

In this connection we cannot withhold a portion of the eloquent compliment paid to Lieut. Maury, at a recent celebration by the Alumni of the University of Virginia, by Mr. B. Johnson Barbour, the President of the Association. In proposing Mr. M.'s health, Mr. Barbour introduced the subject of his researches and discoveries in some playful, but very happy remarks, and thus concludes:

But more seriously, my friends, should we express our gratitude to Lieutenant Maury—to this Harvey of the Seas—for his discovery and explanations of the laws of their circulation; to this "chronicler of the winds" as they travel in their circuits. Especially should we admire him for the spirit in which all this has been done—that pure and healthful spirit which has sought the light of science to read aright the oracles of truth. Well might I say that the imagination of the infidel poet seems tame by such a man. By his side how poor and paltry and insufficient seems the science of the sceptick, talking of the laws of nature, without an acknowledgment of the great Law Giver. His is a higher poetry—his a loftier mind, with grander hopes and brighter visions, who sees the boundless mercy of Providence displayed in the smallest and the grandest of its works—in the coral insect and the mightiest Leviathan—and bows to its influence and hears its voice in the lightest breeze that dimples the surface of the sea, or in the most furious gale that thunders on the weather-bow.—We cannot wonder at the results of investigation pursued in such a spirit as this. Nature delights to teach her lovers! Heaven is watchful o'er its worshippers, and allows them to trace the story of the drifting sea-weed, and to gather wisdom from the relics of the storm; to gaze with calm delight "till some new planet swims into their ken," to look with thoughtful serenity upon "the hurricane eclipse of the sun"—and thus learns humbly to depend upon the one intelligence which reigns through all. Honor to the Philosopher always—but especially honor to the one who comes with filial devotion to lay his trophies at a mother's feet, and to teach his brethren, in love and faith, and yet with amplest knowledge, that every fresh discovery in science is but a brightening of a link in that great chain which unites us to the Architect of Architects; that earth and sea and air, are bound together by one great band, and that all their fountains, waves and currents are but the pulsations of that great heart which throbs in mercy throughout the universe.

SPECULATORS.

We have had frequent occasions to warn our country friends of the efforts which are made by speculators to control the price of breadstuffs, as well as other commodities, by misrepresentations of the demand and supply. A developement was made by one of our city papers some months since, which showed the *modus operandi* by which such things were managed here, in the Flour trade, and opened the eyes of many an unsuspecting person to the state of things in this matter. To show how extensive these combinations and efforts are, we copy the following from the Detroit Tribune, of an attempt on a grand scale to control the entire market of the greatest grain region of the country. Every one can make his own comments, as each will have his own reflections:

THE COMBINATION AMONGST PRODUCE DEALERS.

—Not long since, we published an article from the New York Journal of Commerce, stating that a convention of produce dealers had been held in Buffalo, at which measures were adopted calculated to keep up the price of breadstuffs as long as possible, for the purpose of enabling them to dispose of their surplus. The article was not generally credited. But it is fully confirmed by the Buffalo Republic of Saturday, which asserts upon reliable authority, that such a meeting was actually held there a few days prior to the 1st of July, which was attended by dealers from various points from Chicago to New York. The parties it is understood control about three-fourths of all the flour and grain now in store awaiting shipment and in *transitu* from the western granaries to the eastern markets. The object of their meeting was to combine in order to keep up the present prices until the latest possible moment.

P. S.—Since the above was in type, we have received additional information, which settles the question emphatically. The convention was held at the Clarendon, and was quite numerously attended. The combination went into operation early last week, and had the effect to immediately check the downward tendency of prices, which had become alarming, and to cause them again to go upward. Purchases, to a considerable extent were also made by those in the street, and several unsuspecting outsiders in this vicinity were victimized. Large quantities of flour were ordered into store, and corn, in the face of a decline of 4s. 6d. sterling in the English market, maintained its buoyancy at an advance. It is not difficult to account for the milk in the cocoa nut now. The matter is perfectly clear, and several very unusual "freaks of trade" are reconciled without the aid of forty feet reflectors.

THE BALTIMORE MARKET—THE CROPS—July 30.

The result of the harvest just finished, is generally speaking, quite satisfactory, so far as the published statements from other States can be relied on. As regards our own State, the Wheat is of good quality, far superior to last year's, tho' the quantity, from causes heretofore stated, will not be found to be a full average. The same, we believe, is the case also in Virginia. We had intended to have made up a statistical statement of the result in our own State, but have not received the data expected, to enable us to do so in time for this number.

As was anticipated, the new Wheat has been pressed into the market in large quantities, and not in the very best order; added to which the millers are buying very sparingly, not being certain how the market would rule, and obtaining just enough for present and daily wants, and choose this season for repairs—business is inactive at this season, and many of our business men are absent from the city—all these circumstances combined to produce a very material decline in price about the middle of the month; a rally however was made during the past week, and the market is much firmer.

We quote Wheat, white, fair and good to prime, $1.70 a $1.85 cents, and red, same quality, $1.65 a $1.75 cents—superior or inferior lots, vary in proportion from these rates; Corn—white $1.00 a $1.02, Yellow 97 cents, and receipts light; Rye—new Md. $1.10 a 1.15; Pa. old $1.20; Oats are brisk, new Md. 50 a 52c., and old Pa. 57 a 58c.; Clover Seed $7.50 a 7.75; Timothy seed $3.75 a $4, and Falaxseed $1.50 per bushel; Guano—Peruvian, $52 per ton of 2240 lbs., delivered in any part of the city; Mexican $27 to $14, as in quality; Hay—new baled $26 a $28; loose $20 a $23; Plaster, ground, bbl. $1.25 a $1.37; lump, $3 per ton; Naval Stores—but little doing, and no change in rates—Provisions are active; large sales Bacon and Pork are made, and an advance has been made in some instances—Rice, fair to prime, 6¼ a 6¾c.—Tobacco, continues in active demand, and prices fully supported for all that arrives—the foreign advices show that the article brings remunerative prices, and the competition here among purchasers, is very brisk,—we quote for Md. good to prime brown $7.50 a 11; good com. to mid. 6.75 a $7.50; sound com. 6.25 a $6.50; frosted and infer. $6—tobacco from the upper counties, is in active demand, but there is little arriving; tips or tails are quoted at 6.50 for infer. and 7 a $7.50 for good; seconds $8 a 10.50; reds 12 a $14, and spangled 14 a $17—all Ohio tobacco received is taken as soon as inspected—Wool is brisk, and most of that which arrives is promptly taken at full rates; unwashed 18 a 20c., pulled 21 a 25, tub washed 29 a 30, fleece wool com. to quarter blood 26 a 27, half to ¾ blood 28 a 37, full blood 37 a 40, and extra 42 a 45—Whiskey is in brisk demand, 37½ a 38 in bbls, for Md. and Pa. and 38½ a 39 for Ohio; hhds. 36½ a 37c.—Flour has been restricted by the light supply, tho' the sales have been considerable, for export and to the trade—Howard street $8.75 per bbl.—City Mills, 8.75; Ohio, $9, family and extra flour, $10.50 a $11—Rye flour, choice brands $7.62 a 7.75, mixed and ordinary brands $7.25 a 7.50—Corn Meal, $5 per bbl. and country ground at $4.75—Cattle, $4 a 5, on the hoof, equal to $8 a 9.75 net, and averaging $4.50 gross—Hogs, live, are scarce and in demand at 7.75 a $8.25 per 100 lbs.—Sheep $2 a $3 per head.

☞We have some hesitation in publishing the strictures of Dr. Bickell, apprehensive of a controversy which might take more of our space than we would desire to devote to a subject which, however intrinsically important in itself, would probably be uninteresting to the great body of our readers. We have, however, concluded to publish them, reserving to ourselves the right to dismiss the subject at our pleasure—for "when Doctors differ, who is to decide?"

ANALYSIS OF THE ASHES OF OAK AND PINE LEAVES, AND THEIR COMPARISON WITH THOSE OF COTTON AND CORN.

We have received a pamphlet containing tables of analyses of the ashes of the oak leaf, pine leaf, and of those of cotton and corn, carefully made by Prof. Shepherd, of Charleston, at the request of the Black Oak Agricultural Society of S. Carolina. The results are interesting, and demonstrate the value of the leaves designated for the purpose of manure for cotton and corn.

The agreement between the ashes of the pine and of the oak leaves, in regard to soluble and insoluble substances is striking; the ratio being as 1 to 12 in pine leaf litter, and as 1 to 13 in that of the oak; while a very remarkable contrast subsists between their contents of carbonate of lime and magnesia, and of silica. The carbonate of lime and of magnesia in 100 lbs. of oak leaves, being six times greater than the same weight of pine leaf, while the silica of the latter surpasses that of the former by 2½ times. In all other respects the difference between the two species of ash are inconspicuous.

There are also comparative tables of the five chief ingredients of the substances analysed, viz: carbonate of potash with soda, phosphate of lime and magnesia, carbonate of lime and magnesia, silica and sulphate of lime.

The report thus sums up the result of the investigation.

"The foregoing tables show that 100 lbs. of Pine or Oak leaves contain but one-third the quantity of the highly important Alkaline Carbonate requisite for 100 lbs. either of Cotton or Corn: but as this ingredient is afforded to some extent by all clayey soils, through the gradual decomposition of the feldspar and mica they contain, it seems

probable that this amount of leaf litter would be adequate to maintain the soil in fertility for both of these crops.*

One hundred pounds (or rather 110 lbs., making allowance for hygrometic moisture in the atmospherically dry leaf) of either of these kinds of leaf-litter, will fully supply the Phosphates, indispensable for the same weight of Cotton and Corn: while the less important Carbonates of lime and magnesia, it will (except in the case of the Pine Leaf for Cotton) generally give a large surplus. In the 100 lbs. of Pine Leaves, there is three times too much of organized Silica for Corn, and forty for that of Cotton. In the 100 lbs. of Oak Leaves there is only a sufficiency of the same element for the Corn, but eleven times more than is needed for the Cotton. Of Sulphate of Potash and the Chlorides, the 100 lbs. of leaves of either kind, will supply all that is demanded by either crop, in like quantity.

TABLE,

Showing (in lbs. and decimals of lbs.) the Mineral Constituents in 60 lbs. Indian Corn, in 60 lbs. Pine Leaves, and in 60 lbs. Oak Leaves.

	CORN.	PINE LEAVES.	OAK LEAVES.
	lbs.	*lbs.*	*lbs.*
Potash,	0.1111	0.0596	0.800
Phosphate Lime and Magnesia,	0.1766	0.1566	0.223
Carbonate Lime and Magnesia,	1.0265	0.1987	1.172
Silica,	0.2192	0.5647	0.267
Sulphate Potash,	0.0127	0.0082	0.042

*Still it might be useful to add, along with this quantity, all the wood-ashes at command upon the plantation. These usually contain about 15 per ct. Carbonate Potash.

NEW VARIETIES OF WHEAT.—We have received from the Patent office, a few small packages of the following kinds of Wheat, which we will distribute to applicants, viz:—Turkish Flint Wheat, from Mount Olympus, in Asia, to be sown in autumn—Early Noe Wheat, selected by the Agent of the Patent Office in France, and may be sown from September till April—Pithusian Wheat, procured from the Island of Yvica, by the U. S. Consul at Alicant, to be sown in autumn.

☞ We have received from Dr. Bayne, too late for our present issue, an essay on the cultivation of the Strawberry. We know no one more competent to give our readers a first rate practical article on the subject. It will appear in our September No. The Dr. promises to follow it with an essay on the Peach, Pear, and Apple, for all which we will be greatly indebted to him.

☞ Mr. R. M. Lockwood, Exchange Place, it will be seen by his advertisement, offers for sale another article of Super-Phosphate, of the value of which he proposes to offer abundant proof both in the chemical analysis of Dr. Jackson of Boston, and Dr. Piggott of Baltimore, as well as by the experiments of those who have used it. Mr. L. will send a pamphlet indicating its value to all who may be disposed to try it.

We would also refer to the advertisements of Mr. Trego, Mr. Chappell, Mr. Rhoees, Messrs. Turner, and others, offering their several manufactures to the farmer.

WHEAT.—A very interesting paper, on the Cultivation of Wheat, with numerous engravings, will appear in our next.

A SIGNIFICANT SIGN.—We learn from reliable authority, that *Geo. Peabody, Esq.*, the eminent American Banker, of England, has given the most earnest assurances to his correspondents in the U. States, that all the grain that can be spared in this country, will be required in Europe the coming year. We know not on what data Mr. P. predicates his opinion, as the accounts latterly received are rather favorable for the crops of England, but suppose it is based on the continuance of the war, and the troubled state of affairs growing out of it. Be it what it may, however, no more reliable judgment could be formed than that which emanates from the respectable source indicated, and it is an additional proof that our breadstuffs must during the year maintain good prices.

P. S.—Since the above was written, we find the following in the Sun of the 27th, which proves the correctness of the suggestions of Mr. Peabody; we were aware, before, that large orders were in the country, for supplies for France, whenever the price of flour reached a certain point:

THE CROPS AND THEIR EXPORT.—The export movement in new wheat has commenced, several freight engagements having been made at N. York within a day or two. As the receipts increase the outward movement will be large. The Tribune learns from parties connected with the foreign trade, that very large preparations have been made by means of credits upon European banking houses for the purchase of breadstuffs and provisions during the coming season. If our markets do not maintain too high a figure, England and the continent will take all our surplus breadstuffs at fair prices. The arrangements made for purchasing we are told are larger than ever before. The shipment of flour and wheat to Great Britain and Ireland thus far this season (since September 1, 1854) are very inconsiderable compared with the previous year, having been only 140,000 barrels flour against 1,800,000, and 203,000 bushels wheat against 5,846,000. Corn shows an increase of about 300,000 bushels during the same period. The prospects now are, however, that shipments of all descriptions of breadstuffs will be largely increased. The arrivals at tide water in New York this season show a decrease of 668,232 bbls of flour, 1,007,286 bushels wheat, and an increase of 3,135,941 bushels corn as compared with 1853, and a decrease of 162,669 barrels flour and 1,202,844 bushels wheat, and an increase of 1,150,000 bushels corn as compared with 1854.

VETERINARY INSTITUTE.—We have read a copy of the prospectus and regulations of the Boston Veterinary Institute, incorporated in May, of which Dr. D. D. Slade is President, and Drs. Dadd and Ch. M. and Robt. Wood, compose the Faculty. References are made to a number of the most eminent men in the country—the list of which is headed by Hon. Mr. Wilder, President U. S. Agricultural Society, and for Maryland, Hon. H. G. S Key. This is a most praiseworthy undertaking, and has our best wishes for its success.

☞ We are gratified in being able to announce, that the Hon. Judge E. F. CHAMBERS, has accepted the invitation to deliver the Address before the Md. State Agricultural Society, at the Annual Meeting in October.

VALUABLE ESTATE IN VIRGINIA FOR SALE.—Capitalists and others, are referred to the advertisement on another page, of Messrs. Sale and Scott, offering for sale on the 8th of this month, a large and one of the finest upland estates in Virginia. The terms, it will be seen, are very liberal, and we learn that this tract of land is exceeded in intrinsic value by few in that section of Virginia.

A subscriber at Evansville, N. C., enquires for a prevention of the "*Bug*" which destroys the "*Seed Bean.*" "It is almost impossible," he says, "to preserve our seed at all, so destructive is this Bug." Will some one be good enough to furnish us the information.

We should be glad, also, to get information as to the best method of saving and cleaning Orchard grass seed.

SOUTH CAROLINA.—A meeting is called for the second Wednesday of this month, at the Capital of this State, for the purpose of forming a State Agricultural Society. Col. A. G. Sumner, has published an address to the public upon the subject, which will, no doubt, be heartily responded to by the planters and farmers of the Palmetto State.

☞ Charles B. Calvert, Esq., has consented to deliver the Annual Address before the Frederick County Agricultural Society in October next. The *Citizen* says:

We are happy to learn that Hon. CHARLES B. CALVERT, of Prince George's County, has consented to deliver the Annual Address before the Frederick County Agricultural Society in October next. Mr. CALVERT is the founder of the Maryland State Agricultural Society, and was for many years its efficient President. His known ability, large experience and warm devotion to the cause of Agriculture, give every assurance that his address will be of the highest literary and practical value. His exertions and example have done more than any man in the State, to elevate the character of Agriculture, and we are sure our farmers will give a hearty welcome to one so worthy of their esteem.

☞ The Hon. Andrew Stevenson of Virginia, has accepted the invitation of the Agricultural Society of Montgomery County. Md., to deliver the Annual Address in September next. In making this statement, the Montgomery Journal justly remarks:—"Mr. Stevenson is favorably known to the country from the distinguished positions held by him, at home and abroad, under the General Government. He was the first President of the State Agricultural Society of Virginia, and is well known to his own State for his love of Agriculture as a pursuit, and his zeal to elevate, as a class, all who are dependent upon it for a living. We think that our Society has been very fortunate in their selection of an orator for their next anniversary meeting."

FOR THE AMERICAN FARMER.

RIVERSDALE, July 21, '55.

MESSRS. EDITORS:—I regret being compelled again to trespass upon your columns: but a friend has suggested that the Editorial remarks on my article, in your last number require some reply at my hands. You are perfectly correct in supposing that I am at all times ready to do justice to the many noble spirits of other professions, who have contributed their means and time to advance the Agricultural cause. Without the slightest intention of quibbling about the meaning of a word, I think that if my worthy friends will again examine my article and their strictures upon it, they will come to the conclusion that they are the parties, and not myself, who should come to "a juster view of the matter." I commenced with the declaration that any comparisons or illustrations I might use, should be considered, not as an attack upon other professions, but simply as demonstrating the effect of combinations to protect their own interests. Being a plain man, I use the plainest and shortest method of arriving at the object I have in view, and I am not disposed to grieve in the least at your strictures, because I am inclined to think that other professions will cry out, "Save me from my friends," when they read the conclusions to which you arrive. Mine is the plain pile, yours the gilded one, but both producing the same result. I have never said, nor do I think that other professions conspire expressly against the Agricultural Class, but in their combinations to protect their individual interest, they overlook the general interest of the whole body politic, and that the effect of these individual combinations is injurious to Agriculture. On the other hand, a combination to protect the Agricultural interest will produce the greatest benefit to the greatest number, although it may curtail the large profits of certain individual interests. My motto is "that all who are not for us are against us"—and I rather think the noble examples alluded to in your article are the exceptions, and not the rule.

CHARLES B. CALVERT.

NOTE EDITORIAL.—We take pleasure in publishing the above, and do not regret our misapprehension of the point in question, as it induces Mr. Calvert to make more explicit the "just view" which, however we may have been impressed by his article, we had no doubt he really entertained. Our desire was to shield the "noble spirits," of whom he now plainly shows his appreciation from what seemed to us the too sweeping charge of his second paragraph, and in doing so, we failed no doubt to give due force to his disclaimer in the first.

VIRGINIA AND NORTH CAROLINA AGRICULTURAL SOCIETY.—The Common Council of Petersburg, at its last session, appropriated $2,500 to the Fair of the above named Socity. This will make in all $7,500 which the city of Petersburg bas bestowed on this object, and as the Council represent truly the will of the constituent body in this case, it must be substantial proof to our friends in the country that Petersburg is in earnest in the business. Admirable as was the first Fair (the Intelligencer says) the one in October will leave it far behind.

THE IVERSON GRASS.

DODDRIDGE COUNTY, VA., July 11th, 1855.

Editors American Farmer—

DEAR SIRS:—From the various accounts of the Iverson grass returned to you, you selected* two favorable ones, and published them in your July number, now before me. In justice to Mr. Iverson, and for the good of the farmers of my latitude and vicinity, I beg you will publish my experiment also. On the 4th of September last, I sowed one peck of the Rescue seed on a choice spot on my farm, almost virgin land, following Mr. I's. prescriptions to the letter, except as regards the Oregon Pea, against which I had imbibed a little prejudice from its being so extensively puffed all over the South, just at the time when the Rescue seed was put in circulation. The seed came up three weeks after sowing, under the most seasonable circumstances, and grew to the height of from 3 to 4 inches, before any severe frosts set in. During the week after the 10th December—thermometer ranging from 14° to 30°—three-fourths of the grass perished, root and all. What little was left in the spring, looked stinted and thriftless, every other grass on my place growing right ahead of it. Thinking the experiment already sufficiently expensive, I ploughed up the rescue patch forthwith, and sowed in clover—a crop about which there is no humbug, and to which I owe a considerable apology for my temporary flirtation with its unworthy Georgian rival. (N. B. I have no clover-seed for sale.)

Now, Messrs. Editors, if I feel a little ill-natured in consequence of my experiment, it is merely because Mr. Iverson, with a table of our average temperature before him, had assured me that *my climate* suited his grass better than his own, "the Rescue being a native of the North Pacific country where snow and ice are eternal!" Here the question naturally suggests itself to me: Did the Rescue grass really come from the North Pacific! Perhaps P. T. Barnum can tell! By throwing the light of your lantern in that direction, Messrs. Editors, you may find out something worth knowing, and will certainly greatly oblige your humble servant and oldest subscriber in

"DODDRIDGE."

*We published the accounts sent to us, as they were intended for publication, with good names to vouch for their correctness—and we present "*Doddridge's*" statement, because it was also sent for the same purpose; tho' we would be justified in excluding it, inasmuch as he has not given his name to us—for individually, we care not a groat whether there is ever a peck of the grass seed sold or sown, except in so far as it may be attended with benefits to the farmer or planter. In the spirit of accommodation to those desirous of trying it, we consented to act as a distributing agent for Mr. Iverson, which has detailed upon us much trouble, and precious little profit—although in justice to Mr. Iverson we must say, he evinced every disposition to do the right thing in the premises—but our object in this, as in many other cases, was not for the sake of the mammon, but because we feel ourselves in a position to be useful to our fellow men.

If we are to understand "Doddridge" as intending to convey the impression that we *selected* the two accounts from others because they were favorable to the seed, we must assure him that the insinuation is unjust, and without foundation. We published them because they are the only accounts which we have received, except verbally—and our readers will remember that we alluded to these latter some months ago, in which we distinctly stated that the preponderance was against the value of the seed.

☞ The Hon. T. S. Flournoy, of Va., has accepted an invitation to deliver the Annual Address before the Union Agricultural Society of Virginia and N. Carolina, in October next.

PERMANENT PASTURES.

[illegible]CKSVILLE, N. C., June 17, 1855.

DEAR SIR:—"I am desirous of obtaining some information in regard to forming, a permanent pasture, or to supply the deficiency as it now exists.

"Last fall (October) I sowed 40 acres in grass, 3 bushels of clover seed, with Kentucky blue grass, timothy, herds grass, and orchard grass, which was all I could procure; I sowed it to suit the land, some of it being moist, and all of it bottom land. My clover came up and is dead, and if any of the rest is living except the timothy and a few spears of orchard grass, I don't know it. My timothy all came up, and is now from three inches to three feet high, and some even higher. I hate to plow it up, for the timothy is over the forty acres, and on ten or twelve it is covered. The orchard and blue grass having never come up, or died; our winter was hard and dry. We had much wind and powerful and sudden freezes. I am not able to sow it again, and lose the $107 worth of seed already sown. Now, if you can tell me how to remedy the evil—you will greatly oblige me. (Recollect I am a man with limited means, and the land I propose to graze is worth from $22 to 30 per acre.) My wheat is just now coming off, and we will *certainly* make an average crop, but little or no more. I have 130 common stock ewes, and about 70 half breed Leicesters; how would you advise me to cross for mutton, and how for wool, and where could I get a fine buck of the stock you would recommend, and at what price? I want one far superior to our common stock, and want him real thorough bred or not at all; and if I should get a buck, I will want a ewe also. I want my lambs the 20th March to 1st April; when should the buck be turned in? How long does the ewe go with lamb?"

ANSWER.

We know of no way of remedying the evil of which our correspondent complains, but by sowing more seed; and as he wishes his field for *grazing*, it might be sufficient to sow a mixture of orchard grass and Kentucky blue grass seed, say one bushel of the former, and ½ bushel of the latter per acre. Before mixing the orchard grass seed with the Kentucky blue grass seed, the former should be moistened, and suffered to be in bulk 12 or 24 hours, then mixed with ashes; when the Kentucky blue grass should be added, and the two well mixed before being sowed. The field should be harrowed, the seed sown, and lightly harrowed in, or rolled in. The harrowing will not injure the timothy, but will destroy the weeds. Let the seed be sown about the 20th of August, or beginning of September.

There was much clover destroyed last winter, as also timothy. We passed a field of about 35 acres in July 1854, that had a luxuriant growth of clover on it, thickly set, and we passed the same field in June of the present year, and to our astonishment found scarcely a blade of the clover remaining, having been killed during winter and early spring.

In the same neighborhood, we saw in September 1854, a well set field of timothy, which, in June of the present year, had upon it not more than one spear where a hundred stood the previous Sept., the timothy having been destroyed by the frosts and thawings of the last winter.

If our correspondent's ewes belonged to us, and we wanted superior mutton, we would cross with

a full blooded *Southdown*: if the improvement of the wool was our object, we should cross with a thorough bred *Merino* buck—but if for the butcher, and a combination of wool and flesh then with a Cotswold or New Oxfordshire buck.

The ewe goes with young about five months; varying from 145 to 152 days. The time of putting the ram, depends upon circumstances and location. It is good economy to have the lambs come at that period in spring when their dams can get a good bite of grass in their pastures.

PRICE AND VALUE OF BONES—LIME TO SLATE LANDS.

MARTINSBURG, VA., *July 3d*, 1855.

To the Editors of the American Farmer.

Will you please state what would be a fair price for old bones, to be employed in manuring land, and if they will act well on slate land. How also lime will act on slate land? By answering these questions in the next number of the Farmer, you will confer a favor on an old subscriber.

Respectfully yours,

WM. EVANS.

ANSWERS.

1. The price of bones is about $12 per ton.

2. Bones, when reduced to dust, or dissolved in sulphuric acid, are among the very best concentrated animal manures: they act most promptly, and shew their most visible effects the first year, on what is termed light lands, and should always be *harrowed* in. To prove the value of bones as manure, one need only look at their constituent elements, as shewn by the following table. The analysis was made by *Berzelius*, of OX-bones:

Animal matter, (gelatine,)	33.30
Soda with common salt,	1.20
Carbonate of lime,	11.30
Phosphate of lime,	51.04
Fluoride of calcium, (?)	2.00
Phosphate of magnesia,	1.16
	100

The above analysis was made of fresh bones; that is, of bones that had not been boiled either by the soap-boiler, or glue-maker, and such we presume to be the case with the bones of our correspondent. To demonstrate the efficiency and value of bone-manure, it may be sufficient to state to a practical observing farmer, that 100 lbs. of bone-dust, contains as much *ammonia*, as does 16 times that quantity of cow-dung. When we say *cow-dung*, we mean *fresh*, undeteriorated cow-dung—not cow-dung as found generally in cow-yards, after an exposure of months upon months to the deteriorating influence of the rains and sun. Even the bones that have gone through the extracting process of soap or glue makers, we should think would be fifty times as valuable as barn-yard and stable manure, so far as their nitrogenous principles are concerned, whilst their *superior richness* in the phosphates, particularly in the phosphate of lime—a substance *indispensable* to the heathful growth and maturation of all the grain family—renders a comparison between bones and such manures superflous.

3. As to the question, whether bones will act well on slate land, we might content ourselves with an affirmative answer; for there can be no question but that they will—their nitrogen, and phosphate compounds, renders them particularly valuable on slate, or any other lands, deficient in those elements, and the presumption is, that all lands which may have been long in tillage, and not manured, at short intervals, with substances containing them, stand greatly in need of such applications.

4. In reply to the question, whether lime will act well on slate land? as a *general* answer, we would say yes! provided, those lands have been long in culture and not recently limed. But the composition of slate is so variable, in the absence of the knowledge of the character of the formation of that of our correspondent, it is difficult to speak with any degree of precision. We have before us *analysis* of ten different kinds of slate, whose proportions of carbonate of lime, vary as follows:—0.99; 0.60; 0.10; 1.76; 0.36; 0.61; 1.76; 36.60; 9.89; 43.06;—while only 2 out of the ten specimens, contain any, or mere traces of the phosphate. In practice, lime-stone lands are highly benefitted by applications of lime, and, why should not slate lands be? we ask in return.

We will conclude with this caution, which applies to slate as to all other lands:—*quick-lime* should never be applied at the same time with bone-manure, or any other highly concentrated animal manure.

What stronger proof can be desired of the intrinsic value of bone-dust as a manure, than the facts demonstrated by the practice of farmers, viz: that 4 bushels of bone-dust, dissolved with dilute-sulphuric acid, and mixed with ten bushels of ashes, will produce luxuriant crops on an acre of land—and that 10 bushels of bone-dust, formed into compost with 10 bushels of ashes, 2 bushels of salt, and 1 of plaster, and suffered to remain two or three weeks in the mass, then shoveled over so as to mix the whole well together, will produce similar results.

STATE SHOWS, 1855.

Alabama, at Montgomery,	Oct. 23, 24, 25, 26
Canada East, at Sherbrook,	Sept. 11, 12, 13, 14
Canada West, at Coburg,	Oct. 9, 10, 11, 12
Connecticut, at Hartford,	Oct. 9, 10, 11, 12
East Tennessee, at Loudon,	Oct. 23, 24, 25
Georgia, at Atalanta,	Sept. 10, 11, 12, 13, 14, 15
Illinois, at Chicago,	Sec'd week in Oct,
Indiana, at Indianapolis,	Oct. 17, 18, 19
Kentucky, at Paris,	Sept. 25, 26, 27, 28
Maryland, at Baltimore,	Oct. 30, 31, Nov. 1, 2
Michigan, at Detroit,	Oct. 2, 3, 4, 5
New Hampshire,	Sept. 12, 13, 14
New Jersey, at Camden,	Sept. 19, 20, 21
New York	Oct. 2, 3, 4, 5
North Carolina,	Oct. 16, 17, 18, 19
Ohio, at Columbus,	Sept. 18, 19, 20, 21
Pennsylvania,	Com'cing Sept. 25.
Philadelphia Society for Promotion of Agriculture—Philadelphia, at Powelton,	Sept. 12, 13, 14
Tennessee, at Nashville,	First week in Oct.
Vermont at Rutland,	Sept. 11, 12, 13
Virginia, at Richmond,	Last week in Oct.
Western Va., at Wheeling Isl.,	Sept. 26, 27, 28
Union Ag. Soc., at Petersburg,	Oct. 23d to 26th.

Although in draining land thoroughly, your purse may be drained, yet the full crops that follow will soon fill it again.

WEIGHING OF CORN AND WHEAT.

We copy from the *Charles Co. Times* resolutions offered to the County Society, and referred to a Committee for future action. We hail every sign tho' a cloud no bigger than a man's hand, that farmers are beginning to realise that they have an interest beyond the mere raising of crops, which it is their business to look to. Our opinion is that these crops should be weighed, *if properly weighed.* But we do *not* think they should be weighed by the *purchaser.* What class of men in the world, but the farmer, good easy soul, would go through all this drudgery of production, and then send off the fruit of his toil beyond his reach, to be weighed for him in the just balance of the man whose interest is opposed to his own. There is a trustful, confiding, child-like simplicity in this, that we very much admire, but it is a quality that is not appreciated in business marts. The charity which "thinketh no evil, believeth all things, endureth all things, and seeketh not its own," is a crowning virtue, but it is not always applicable on 'Change. It is little known in our streets, and is thought to work badly in business transactions. It is well taught in our churches, however, and so much prized by some of our most virtuous citizens, that when they go out to their business they leave it at home in charge of their gentle wives and tender babes. We advise our friends to keep theirs in the country. He who knew what was in man, when he sent his disciples forth "as lambs among wolves," said, "be ye *wise as serpents.*" We commend the injunction to all who are liable to be *fleeced.*

WORK IN THE GARDEN.

AUGUST.

Setting out Cabbage Plants.

Avail yourself of the first rain this month and set out your Savoy, and other kinds of cabbage plants, to form cabbages for late fall and winter use.

Preparation of the Ground.—To raise large cabbages, and it should be the object of all gardeners to do so, it is necessary that the ground be manured with a liberal hand, as the whole cabbage family are heavy eaters, and will not grow in luxuriance unless they have plenty of food; though we have manured our cabbage beds, in a measure which some of our neighbors thought excessive, we never found by the appearance of the cabbages that we had over-fed them. It was our rule to give to our beds three or four inches in depth of the best manure which our stable and cow yard afforded, and to have that spaded in to the full depth of the spade; to have the ground raked well and thoroughly as the spading progressed; we then made a mixture of at the rate of 20 bushels of ashes, 2 bushels of *salt* and 1 bushel of *plaster*, per acre; this we applied as a top-dressing and raked the mixture in, when the bed was fit for planting out, the first rain.

Distance apart. Let the rows be 2½ feet apart, and the plants 2½ feet apart in the rows.

Withdrawal of the plants for setting out. The plants should be carefully withdrawn from the seed-bed, so as not to lacerate the roots. Previously to withdrawing them, prepare in a noggin, piggin or other tight vessel, a mixture of 1 gallon of loam, 1 pint of soot and ¼th lb. of flour of sulphur, mix the whole well together, then pour over it as much boiling water as will reduce it to the consistence of cream. When cold, it will be fit for use. As you draw the plants out of the seed bed, place them in this mixture up to the leaves, so as to cover the roots and stems in it. This mixture, not only serves as a repellant to cut and other worms, which prey upon newly set out cabbage plants, but act as a manure also to the plants, encouraging alike their taking root, and speedy, vigorous growth.

After Treatment. Water the plants every afternoon about sundown, after they are set out, until a rain occurs: be particular to keep the ground clear of weeds, the earth repeatedly stirred, and the plants hilled up so as to keep the stalk pretty well covered, the hill should be flat at top, or what would be better, a little basin-shaped, so as to prevent the escape of the rain. About three hillings and workings will be sufficient. In dry weather, supply the cabbages copiously with water, as they delight in, and grow best and most luxuriantly, in a moist earth.

If you were to give them occasional waterings with soap-suds their growth would be greatly promoted thereby.

Heading Cabbages.

Hoe your growing cabbages, keep them clean of weeds and grass, and, by all means, in periods of drought, have them well watered—applying the water just before or after sun down. To ensure success, cabbage must be kept clean from weeds, the earth open to atmospheric influences, and be repeatedly watered, as they cannot stand dry weather unassisted by water; as well as being greedy eaters they are great water-drinkers.

Sowing Spinach.

Prepare a plot of ground as for cabbages—and as near the first of the month as possible drill in some spinach seed; spinach drilled in the first week of this month will be fit for use in September. About the middle of the month drill in more seed; this last sown will be in fine condition for use in October. Towards the last of the month, drill in seed of the prickly sort of spinach for use next spring.

Radishes.

In the first week of this month sow short-top and Salmon radish seed. About the middle of the month sow black and white Spanish radish seeds for winter use.

Asparagus Beds.

Look to these and keep them clean of weeds.

Turnips.

If you have not already sown turnip seed, sow some of the *Early Dutch* turnip seed the first week in this month. This kind is much earlier than any other variety. As to the manner of preparing the soil, &c. we refer to our last month's remarks. If you want your turnips very early, sow in the first week—but you may sow as late as the 15th of the month.

Celery.

Set out your plants for your late crop of celery.

Small Sallading.

Every week during this month you should sow all sorts of small sallading seed, in order that you may ensure a succession of crops for use. Water

the seed beds, which should be in a shady location, every afternoon about sun set, until the plants come up, and continue watering the plants until rain occurs, and afterwards in times of drought

PEAS.

Any time between the 1st and middle of the month you may drill in a few rows of peas. These will yield middling crops in September. Soak the seed in warm water before drilling them in, and water the drills until the vines come up.

BEANS.

Plant a few rows of the early variety of Beans. Soak the seed before planting, and water the drills as advised for Peas.

LETTUCE.

Set out your plants that are of sufficient size, and sow seed.

ENDIVE.

Tie up your advanced Endives to blanch, and early this month sow seed of the early green curled sort.

MELONS AND CUCUMBERS.

Keep these clean of weeds, and if the weather be very dry, water them, taking care not to bruise the vines.

HERBS.

Such as may be in flower should be cut, and dried in the shade.

Slips of sage, thyme, rue, lavendar, hyssop, winter savory, &c., may be planted early this month. Keep them well watered until a rain occurs.

CARE OF THE CROPS.

Keep your various crops clean of weeds, the earth frequently stirred, and in times of drought have them watered freely.

LIMA AND CAROLINA BEANS.

Hoe and clean between the hills—if the weather be dry, water these.

WEEDS.

Have every thing in the shape of a weed gathered and burnt and the ashes either spread or saved; or, if you think better, form them into composts for manure.

FLORICULTURE—FOR AUGUST.

Prepared for the American Farmer, by John Feast, Florist.

Such a season as this we have seldom or ever noticed for the growth of all vegetation, and the abundance of every thing. We have seldom seen exotic plants thrive and flower as at this time under our notice, and if a fine fall should come, we may expect to get plants in the houses in fine order, and with proper care in keeping them so, may expect a fine bloom of the winter flowering plants. This month is a good time to go over and re-pot such as need it—they get well established before putting in the house: it is better than leaving them till late in the autumn, they have time to recover from the effects of moving. Those that require no repotting, see they have good drainage, as this is essential in keeping plants healthy; besides, never give plants too large pots, except it is some soft wooded plants, that require much nourishment to make them bloom fine; but for hard wooded plants, I should never recommend, as more fine specimens are lost by this method than any other way. It is done to save labor in watering, but they get too much water, more than the plant can absorb, therefore becomes saturated and cause decay at the root, and eventually die. Achemenes, Gloxinias and such plants in doors, will make a fine display at this time. Keep them partially shaded and in a moist atmosphere,—exposure to the full rays of the sun will injure the plants, and make the foliage bad and fall off. This is done by watering over the plants when exposed to the sun.

Some seeds of Alyssum, Mignonette, and things for flowering early in the house, sow now, and in succession, so as to have a regular bloom through the winter and spring, and prepare every thing which will flower early and during the winter months. Chrysanthemums are fine plants for fall flowering, and make a house look gay with the profusion of bloom when well-flowered. Dwarf kinds are more generally grown than the taller ones, also suited better for pot culture. They should be re-potted as they advance in growth, fully exposed to the sun,—to grow them as dwarf as possible, and give them plenty of room to spread, pinch off the tops to make lateral shoots, and they will have more bloom by this method. Some of the varieties lately introduced are of uncommon beauty.

Keep the borders and walks clean, and see that every thing is carefully tied to rods, lest they be broken by the wind. Attend to Dahlias as they grow, and give occasionally a watering.

Violets for flowering in pots or frame, remove carefully, and water well afterwards—shade for a few days. Now is a good time to prepare the different kinds of soils for potting, by putting it in some convenient dry place, and as it decomposes, give it occasionally a turning, to make it fit for use.

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TO A CORRESPONDENT.

Susan:—As regards roses not opening and not flowering, it is a general thing with some varieties in a season like this. Monthly Cabbage, Franklin Cluster, White Mycrophilla, and many others of a similar character, are affected in this way. It is moisture and the sun acting on the bud, causes the defect generally. A season like this, roses that the petals overlap, (of Cabbage form) seldom open well, and it is to be accounted for in this way.

J. F.

DEVON STOCK FOR SALE.—We refer those wanting Devon Stock, to the advertisement of the Executor of the estate of the late C. P. Holcomb, by which it will be seen that his entire herd is offered at private sale. As we have had a number of enquiries of late, upon this subject, we refer all interested to the advertisement on another page.

SELF-TRAINING.—A man's own good breeding is the best protection against other people's ill manners.

As a gladiator trained the boy, so we must the mind, to self-sacrifice, "to endure all things," to meet and overcome difficulty and danger. We must take the rough and thorny road as well as the smooth and pleasant; and a portion, at least, of our daily duty must be hard and disagreeable; for the mind cannot be kept strong and healthy in perpetual sunshine only, and the most dangerous of all states is that of constantly recurring pleasure, ease and prosperity. Most persons will find difficulties and hardships enough without seeking them; let them not repine, but take them as a part of that educational discipline, necessary to fit the mind to arrive at its highest good.

AGRICULTURAL SOCIETIES.

Connecticut State Agricultural Society.—At a late meeting of this Society, at Hartford, that city was fixed on for holding the next exhibition, and the following officers were elected: *President*—Samuel H. Huntington, of Hartford; *Vice Presidents*—Charles H. Pond, N. B. Smith; *Corresponding Secretary*—Henry A. Dyer, of Brooklyn; *Recording Secretary and Treasurer*—John a Porter, of New Haven.

Kent County (Del.) Agricultural Society.—At a meeting of the society held at Dover, on the 15th of May, the following resolutions were unanimously adopted, and a copy thereof ordered to be transmitted to the family of the deceased:

"*Resolved*, That we have received the announcement of the death of Chauncy P. Holcomb, Esq., of New Castle County, with profound regret, and heartfelt sorrow; a gentleman distinguished throughout the country for his agricultural literature and eminent success as a practical farmer.

"*Resolved*, That this Society has lost, in him, one of its most esteemed and valued members, and one whose enterprise and progressive spirit has largely contributed to the improvement of the agriculture of our County and State."

The following gentlemen compose the Board of Managers of the Agricultural Society of Kent County, for the present year:

Daniel Cummins and Jacob Williams, Duck Creek Hundred; William Du Hamel and Wilson L. Cannon, Little Creek Hundred; Thomas B. Bradford and Wm. J. Clark, Dover Hundred; Henry Cowgill and Ezekiel B. Clements, Murderkill Hundred; Alexander Johnson and Charles Warren, Mispillion Hundred; Robert H. Clark and Thomas Wallace, Milford Hundred.

The Union Agricultural Society of Virginia and North Carolina.—Messrs. Turpin, Howlett and Turnbull, the committee appointed to receive donations, and to purchase stock for the Model and Experimental Farm of this Society, have received two superior Ewes of the Oxford-down breed of sheep, as a donation from Col. Ware, the celebrated breeder of Clark County, Virginia. The sheep are pronounced by the committee as "beautiful specimens of their kind, of fine size, well and beautifully formed, short legged and heavy fleeces."

North Carolina State Agricultural Society.—The next annual exhibition of this Society will be held on the 16th to 19th October, inclusive. The liberal list of premiums is published in the North Carolina papers.

Pennsylvania Agricultural Society.—The annual display of the Pennsylvania State Agricultural Society will take place this year at Harrisburg, and on the 25th, 26th, 27th and 28th of September. The officers and managers are already exerting themselves to the utmost, and the exhibition is likely to realize all reasonable expectations.

The people of Harrisburg have subscribed for the amount stipulated by the Society, to secure the show to that city.

Ohio State Agricultural Fair.—The State Board have determined to hold a fair at Columbus from the 18th to the 21st of next September. The town has agreed to raise $3,000 toward expenses.

Montgomery County (Md.) Agricultural Society.—The following gentlemen were on the 5th June, unanimously elected officers of this Society for the ensuing year:

R. P. Dunlop, Esq., President.

Otho Magruder, Dr. W. Waters, N. S. White, R. J. Bowie and F. P. Blair, Esqs., Vice Presidents.

John Brewer, John T. De Sellum, Joseph T. Bailey, John L. Dufief and S. T. Stonestreet, Esqs., Executive Committee.

W. V. Bouic, Esq., Recording Secretary.

J. T. Vinson, Esq., Corresponding Secretary.

R. W. Carter, Esq., Treasurer.

The Executive Committee was to meet in Rockville on Wednesday, the 13th day of June, last, for the purpose of making arrangements for the annual Fair and Exhibition, to be held on the second Thursday of September next.

The Rockville Journal bears testimony to the efficiency of the respected President of the Society, and of the Board of officers, who have been re-elected—and adds:—"This Society has achieved a vast amount of good in our county, and it behooves every citizen of the county to encourage, by his best efforts, an institution so eminently useful and beneficial to the agricultural interests of the county. We are gratified to be able to state that the Society was never in a more prosperous condition, and the members are determined that the next Exhibition shall, if their efforts prove successful, far surpass all previous ones."

South-Western Agricultural Association. President—George Hancock. *Recording Secretary*—Hugh Brent. *Corresponding Secretary*—Dr. D. D. Thompson. *Treasurer*—Thos. T. Brent. Fair to be held at Louisville, Kentucky, October 9th to 13th, inclusive.

We have received a copy of the premium list, which is very liberal, and from the success which has attended the preceding exhibition, no doubt a most imposing Show will be had.

Alabama State Agricultural Society.—The first annual exhibition of this new Society will be held at Montgomery, on 23d to 26th October, inclusive. The premium list has been published, and is diversified and liberal, and an earnest appeal is made to the planters of Alabama to sustain the Society.

Agricultural Division of the Patent Office.—A New Oil Plant.—The small tree, [*Castigolionia lobata,*] known in Peru under the name of "Pinoncello," and cultivated about Surco, Huacho, and Sambageque, also growing wild in considerable abundance in those regions, it has been ascertained, yields a valuable oil well adapted to the purposes of illumination. Its bean like fruit, or seeds, when roasted, have an agreeable flavor, preferable to that of the olive. When eaten raw, the etherial oil generated between the kernel and the outer skin is a strong cathartic, the effects of which can only be counteracted by drinking cold water. It has been ascertained that the seeds will grow in Baltimore; and doubtless, plantations of this tree might be formed in many parts of the South, from which vast quantities of oil might be produced, and thus add another link to the great chain of our national wealth. The Washington Union understands that the Patent Office has taken measures to procure some of the seeds of this tree for trial in the South and Southwest.

THE WHEAT CROP.

"The Cincinnati Price Current furnishes the following table giving the crop of wheat for 1850, as furnished by the census report, and its own estimate of the crop for the present year:

	1850.	1855.
Ohio, bushels,	14,487,000	16,000,000
Pennsylvania,	15,367,000	18,000,000
Virginia,	11,212,000	12,000,000
New York,	13,121,000	15,000,000
Alabama,	294,000	500,000
Illinois,	9,414,000	13,000,000
Indiana,	6,214,000	10,000,000
Iowa,	1,530,000	2,500,000
Kentucky,	2,142,000	3,000,000
Maryland,	4,494,000	4,000,000
Michigan,	4,925,000	6,000,000
Missouri,	2,981,000	4,000,000
Tennessee,	1,619,000	3,500,000
Wisconsin,	4,286,000	7,000,000
Totals,	92,986,000	114,500,000

If the Price Current's estimate is anything near a true one the crop for the present year is short. *The crop of* 1849, *given by the census of* 1850, *was confessedly a short one in all parts of the country*, and an increase on it of 22,000,000 of bushels, which is all the estimate allows, *would not be equal to the increase of the population of the country since that period.*"

We copy the above, and have reason to believe that it is as fair an estimate of the crop of wheat as can, at this time, be made, judging from the reports we find in the papers, in the various sections of the country. Now let it be borne in mind, as remarked above, that the year 1849 was an unusually disastrous year for the wheat, and as the increase of the consumers of breadstuffs, by immigration, has been unprecedentedly large within that period, it must be evident that the increase this year, above indicated, will not be more than sufficient to make the quantity equal, in fact, to that of 1849—and when it is also remembered that the surplus of former years is almost entirely exhausted, in this country as well as in Europe, and that the drain upon the agricultural districts for the service of the war, is now likely to be of long continuance, and is thus making consumers out of the producing classes, it is but reasonable to suppose that the price of wheat, tho' it may be temporarily depressed from various causes at this season, must again rally, and maintain a price approximating that at which it has rated for months past.

We also copy the following, from the Cincinnati Columbian of the 29th June—It has a candid and fair appearance, and is worthy of the attention of all who are searching for the truth on this important subject:

"We have watched with much interest the condition of the crops and the probable effects to be expected from the coming harvest. We have now information from all parts of the country and can form a pretty correct estimate of what the wheat crop is likely to be. Two facts may be regarded as fixed; that the growth of the wheat crop has been remarkably good, and that in the large wheat States the breadth of ground sown is not as much as usual. These two facts must be taken as counterbalancing one another—the result will probably be a full average crop. We see that many persons expect more than this, and are looking out for an enormous wheat crop. Such expectations will hardly be realized.

Most persons have not considered where the great localities of wheat are, and what is the relative proportion of the several States. We hear, for example, that the wheat in Georgia is admirable, and that the fields of Illinois are teeming. But it must be recollected that Georgia produces very little wheat, and Illinois only about half as much as Ohio. The great wheat States are Ohio, Pennsylvania and Virginia. If there be an average crop, then these three States will produce about the following amounts:

Ohio	22,000,000	bushels.
Pennsylvania,	17,000,000	"
Virginia	14,000,000	"
Aggregate,	53,000,000	"

Now this is nearly half the entire crop of the United States. If, then, there be a serious falling off in these States, it is obvious that most abundant crops in the Southern States will scarcely make it up. Now in Virginia and Pennsylvania, the crop is not more than an average one, and in Ohio the breadth of ground sown is rather less than usual. Surveying the whole field we come to the conclusion that there will be an average crop; but hardly more.

Oats will be most abundant. It is on the whole the best crop of the season.

Corn cannot be judged of at this time. It depends upon the weather of July and August. It is not probable that we shall have such a drouth as last year.

Potatoes are most abundant, and it is probably the best season for that article that we have known for many years.

Notwithstanding there will be enough and to spare, we think the effect on the market price somewhat exaggerated. There are other things than the abundance of a single crop to be taken into view which affect the market price of articles. In this case there are two facts especially to be taken into view.

First, there is a vacuum in the country, as to all grain. Exportations of wheat and flour to Europe ceased long since. The enormous price of these articles this spring proves there was a deficiency in the supply. This vacuum must be filled up. The great cities must be fully supplied before the price can fall to a low point. Secondly, there is also another regulator of price, viz., the foreign demand. War is now raging in Europe, and one of the greatest wheat districts—that around the Black Sea—will not furnish its usual surplus. The price in Europe is not likely to fall materially. For several months the Liverpool price of Ohio flour has been 42 shillings per barrel, or about $10. 40. Between Cincinnati and Liverpool the cost of freight and commission cannot be far from $2. Flour, therefore, will fall below $8 per barrel only as it falls in Liverpool. The price of corn will, of course, be kept up till near the harvest of the new crop.

There is another element of the wheat and flour market which is not considered as much as it

should be. It is constantly taken for granted that because this country *can* raise a great surplus of wheat therefore it does. This happens not to be a fact. Three or four States, such as Virginia, Ohio, Illinois, and Wisconsin, have raised large surplusses; but the United States, in the best of seasons, raise but a comparatively small surplus. Half the States, such as those of New England and the South, raise but small quantities, and buy of the others. More than a million of barrels of Western flour are consumed in New England. In the largest crops we have had, not more than twenty per cent. could be spared to go out of the country. The immense emigration to this country annually consume a crop they do not raise. Then, when the crops fall short, we find in one or two years such a state of things as we have just passed through—a positive deficiency of grain. The bountiful supply of the minor grains and vegetables will this year add greatly to the general abundance and have a strong tendency to diminish prices.

There is another point of view in which even average crops will have an immensely beneficial effect, and that is on the general business of the country."

AGRICULTURAL DIVISION OF THE PATENT OFFICE.

The Hessian Fly.—According to the account of Mr. Edward Tilghman, of Queen Anne county, Maryland, says Mr. Glover, the eggs of the Hessian fly, (*accidomyia destructor,*) very destructive to wheat, are deposited in October, in the longitudinal cavities between little ridges of the blade, from which in about fifteen days, very small worms or maggots appear. It is properly a small, two-winged gnat, which lays its eggs in winter or fall, when the grain has sprouted and begins to show leaves. They make way down the blades with considerable activity until hidden between them and the stems of the plant. The number on a single leaf is often twenty or thirty, and sometimes greater. The eggs are extremely minute, and of a pale-red color; and if the weather prove favorable, they will hatch in four days. The maggots when they first come out of their shells, are also of a pale-red color. Forthwith they crawl down the leaves and work their way between them and the main stalk, passing downwards till they come to a joint, just above which they remain, a little below the surface of the ground, with the head towards the root of the plant. Having thus fixed themselves upon the stalk, they become stationary, and never move from the place before their transformations are completed. They do not eat the stalk, neither do they penetrate within it, but lie lenghthwise on its surface, and are wholly nourished by the sap. As they increase in size, and grow plump and firm, they become imbedded in the side of the stem by the pressure of their bodies upon the growing plant. One maggot thus placed seldom destroys the plant; but when two or three are fixed in this manner around the stem they weaken and impoverish it, and cause it to fall down or wither and die. They usually come to their full size in five or six weeks, and then measure about three-twentieths of an inch in length. After escaping from the pupa state the body of the Hessian fly measures about the tenth of an inch in length; the head, antennæ, and thorax are black, the hind body tawny, more or less widely marked with black on each wing, and clothed with fine grayish hairs. The legs are pale-red or brownish, and the feet black. The maggots are generally transformed to flies in autumn.

The Hessian fly is subject to the attacks of several parasitic insects, which serve more or less to lessen their numbers, the chief of which is the ceraphron destroyer, of (say) a shining black four-winged fly, about one-tenth of an inch in length.

Mr. Herrick recommends that the stouter varieties of wheat should be chosen, and the ground kept in good condition. If all wheat is sown late, some of the eggs will be avoided, but the risk of winter-killng will be incurred. Burning the stubble immediately after harvest, and then ploughing and harrowing the land is also highly recommended. Steeping the grain and rolling it in air-slacked lime or plaster, as promoting a rapid and vigorous growth, would also be beneficial.

THE CHARLES COUNTY AGRICULTURAL SOCIETY.

At a quarterly meeting of this Society, held on the 10th June, the Treasurer made a statement, showing a small deficiency in the finances to meet expenses of the past year. There was due, however, for subscriptions from members whom he had not been able to see an amount more than sufficient to pay off the whole indebtedness of the Society.

The President called for reports from the several Select Committees, appointed in July last. None submitted; and various excuses offered by members of the committees present.

Dr. F. R. Wills offered the resolutions which here follow:

Resolved, That we, the Agriculturists of Charles county, believe that it is high time a Convention was called of Agriculturists throughout the State, to lay down their platform, as their interest is utterly disregarded: as Agriculturists, we object to the doctrine of free trade for Agriculturists and protection for other interests.

Resolved, That we recommend to our fellow-countymen, Agriculturists, to meet in mass meeting at our court house, and appoint delegates to a General Convention, to assemble at such place and time as may seem in the judgment of the Convention most suitable to forward their interests.

Resolved, That we recommend a convention throughout the State and the States generally, to co-operate with us, and to unite to take the right and true ground—ground on which we must stand if we are not to be the hewers of wood or drawers of water.

Resolved, That we as Agriculturists object and are opposed to the weighing of corn in our adjacent markets, to wit, Baltimore and the District; and further we recommend that we petition the next General Assembly to repeal the law regulating the weighing of wheat, (or weigh all the wheat of the cargoes,) as we have many good and sufficient reasons to know that injustice has been done us, so that we may be put on a footing with the other classes of our citizens, as we have not other articles purchased by us weighed to us, to wit, salt, grass seeds, &c.

Dr. Francis Matthews called the attention of the Society to the following resolutions, which he offered and were referred to a committee, at the annual meeting held on the 31st of October, 1849.—These resolutions having been read, Wm. Matthews, Esq., moved that they, together with the above series offered by Dr. Wills, be referred to a committee to be appointed by the Chair. The motion was agreed to, and the Chair appointed Wm.

MATTHEWS, Esq., Dr. F. R. WILLS, and F. B. F. BURGESS, Esq., said committee.

1. *Resolved*, as the sense of this Society, that the interest of the agricultural community require that wheat be sold in the markets of this State by the running struck measure, as Indian corn, rye, and oats now are, and not by weight as at present.

2. That a preference ought to be given to all vessels freighting produce to market, that will carry our grain in bags, over these that only carry it in bulk

3. That justice to the planting interest demands, that in all future appointments of Tobacco Inspectors to the State Tobacco Warehouses, that the Executive confer such appointments to one inspector from each of the largest tobacco-growing counties.

4. That the law requiring produce commission merchants to obtain a license before they can sell our produce, ought to be repealed, since it has manifestly worked to the disadvantage and injury of the planting and farming interest of this State.

5. That the State, and other Agricultural Societies of this State be, and are hereby respectfully invited to concur in the above resolutions, and co-operate with this Society in furthering and promoting the objects of them.

6. That the Senator and Delegates to the General Assembly from this county, be requested to exert their influence to obtain the repeal of the laws referred to in the 1st and 4th resolutions, and to urge upon the Executive the propriety of the 3d.

7. That a Committee, composed of two of its members learned in the law, and of three farmers and planters, be appointed by the Chair to draft the form of a law embracing the objects of said 1st and 4th resolutions, and also to draw up a memorial upon the subject generally, to be presented to the consideration of the General Assembly.

F. B. F. BURGESS. Esq., moved that the Society proceed to the election of officers for the present year. All the officers of the past year (except the lamented JAMES FERGUSSON, Corresponding Secretary, deceased,) were re-elected, unanimously.—J. J. HUGHES, Esq., was elected, unanimously, to fill the vacancy occasioned by the death of Mr. Fergusson.

WM. MATTHEWS, Esq., moved a vote of thanks to the officers for their faithful and efficient services during the past year—adopted.

Report of Analysis

OF A SAMPLE OF

SUPER PHOSPHATE OF LIME.

FOR

B. M. RHODES, of Baltimore City.

LABORATORY OF STATE CHEMIST,
No. 29 EXCHANGE BUILDING.

Baltimore, June 13th, 1855.

The sample of "Super-Phosphate of Lime" was taken by the Chemists themselves, and represented a fair average sample of a lot, consisting of 200 bags at 150 lbs. It was analyzed, and found to be composed as follows:

Composition in Per Cent.

Sulphuric Acid, (real, dry,)	27.33
Lime,	27.66
Phosphoric Acid,	18.78
Animal Charcoal,	3.00
capable of producing of Ammonia, 0.22	
Per Oxide of Iron,	0.86
Sand,	2.77
Water,	19.60
	100.

The above constituents are united to each other in the following manner:

State of Combination.

Acid Phosphate of Lime,	27.25
containing of Lime,	8.47
" " Phosphoric Acid,	18.78
Hydrated Sulphate of Lime,	58.80
containing of Lime,	19.19
" " Sulphuric acid (real dry)	27.33
" " Water,	12.28
Animal Charcoal, Per Oxide of Iron and Sand,	6.63
Moisture,	7.32
	100.

The above article has been manufactured after a formula furnished by the State Chemist, and it is but due to state that the directions have been followed by the manufacturer with such accuracy and correctness, as to place this article among the very best of its character. To prove this, it must be remembered that Super-Phosphate of Lime is made by the addition of Sulphuric Acid to common Phosphate of Lime, (a combination of 53.8 per cent. of Lime, and 46.2 per cent. of Phosphoric Acid,) as contained in Bones, Mexican Guano, &c., by which means one part of its Lime is separated from it, forming with the added Sulphuric Acid, common Plaster of Paris, whilst the unaffected part of the Lime remains in combination with the entire quantity of Phosphoric Acid, thus forming a compound of Phosphoric Acid and Lime, which contains relatively more of Phosphoric Acid than the original Bone Earth applied. This new compound is called Bi-Phosphate of Lime; it consists of 28.5 per cent. of Lime, and 71.5 per cent. of Phosphoric Acid, and as it is easily soluble in water, (contains Phosphoric Acid in a soluble form,) the manufacturer's principal point of view must be directed to the addition of so much of Sulphuric Acid as to conver the whole of the insoluble common Bone Earth into Bi-Phosphate of Lime, leaving none of it unacted on.

It will be seen from the above composition of this article that the quantity of Sulphuric Acid added, was so much as to form with one part of the Lime of the applied Bone Earth 58.80 per cent. of Plaster of Paris, in consequence of which there were formed, on the other side, 27.25 per cent. of an Acid Phosphate of Lime, being composed of 8.47 parts of Lime, and 18.78 parts of Phosphoric Acid. This composition shows at once the compound to be a mixture of:

Bi-Phosphate of Lime (soluble) and Common Bone Earth.

	In per Cent.			In per Cent.	
Lime,	7.00	28.5	Lime,	1.47	53.8
Phos. Acid,	17.56	71.5	Phos. Acid,	1.22	46.2
	24.56	100.		2.69	100.

Of the 18.78 per cent. of Phosphoric Acid that the above article contains, 17.56 per cent. have therefore entered into the composition of a Bi-Phospbate of Lime, (amounting to 24.56 per cent.) which has thus been rendered soluble; whilst but 1.22 per cent, of Phosphoric Acid has been left unacted on, and still remains as a constituent of Common Bone Earth, the quantity of which amounts to 2.69 per cent.

Of the whole amount of Common Bone Earth exposed to the action of Sulphuric Acid, viz: 36.44 parts, only 2.69 parts have therefore been left in their original condition, a result which agrees as closely with the desired theoretical results as can possibly be expected from the manufacture of such large quantities. Far from differing materially in the effect of a chemically pure article, the small quantity of unaltered Bone Earth it contains may rather act beneficially in some way, as it will protect the bags from being spoiled by an excess of Sulphuric Acid, which would happen in the reverse case.

The superiority of Bi-Phosphate of Lime, as a manure, over Common Phosphate of Lime (Bone Earth, Mexican Guano, &c.) lies in its being easily soluble in water, in consequence of which it is capable of penetrating the soil intimately to which it is applied. But whilst penetrating the soil it meets every where with particles of Lime which are present in, and uniformly diffused through, all cultivated soils, and there re-constitutes with them the Common Bone Earth (by uniting again with that portion of Lime from which it was separated by means of Sulphuric Acid) in such a state of fineness and sub-division as cannot be effected by simply applying Bone Earth or Mexican Guano, nor by any other mechanical means. This article, though applied in the form of Bi-Phosphate of Lime, yet nevertheless acts as a manure in the form of invisible and uniformly diffused particles of Common Bone Earth.

An application of 200 lbs. of the above article per acre, will furnish a sufficient quantity of Phosphoric Acid to meet the wants of any crop; but as the article does not contain any ammoniacal compounds, it will be advisable to apply also Peruvian Guano with it, at the rate of 70 to 100 lbs. per acre, (according to the mechanical texture of the soil,) in order to give the crop a quick start. Each of them should, however, be applied separately: the Super-Phosphate immediately after having ploughed the soil, the Peruvian Guano any time afterwards, just before planting.

This kind of manure is superior to all others on *soils deficient in Phosphoric Acid.*

VALUATION.

If 2000 lbs. of raw Bones, containing 23.6 per cent, of Phosphoric Acid are worth $34, *then* 1 *pound of Phosphoric Acid is worth* 5.1 *cents.*

Again: if 100 lbs. of Sulphuric Acid, containing 56.26 lbs. of real, dry Sulphuric Acid are worth $3, *then one pound of real, dry Sulphuric Acid is worth* 5.3 *cents.*

The above Super-Phosphate contains in 2000 lbs.:

376 lbs. of Phosphoric Acid, which at 5.1 cents are worth	$19 18
And 546 lbs. or real, dry Sulphuric Acid, which at 5.3 cents are worth	28 96
Total valuation of 2000 lbs.	$48 14

The above represents the cost of materials for which they can be purchased by farmers who attempt to make the article themselves, without any allowance for labor, bags, interest, &c.

JAMES HIGGINS,
State Agr. Chemist.
CHARLES BICKELL, *Th. D.*

The undersigned, in calling the attention of the Agricultural Community to the above Report and Analysis of the State Chemist desires to state that prior to his engaging extensively in the sale of the Super-Phosphate, he distributed some 75 tons of the article in lots of 1 to 30 bags, amongst the farmers of the Southern States, and he is happy to state that all who have used it, testify to its great superiority over Peruvian Guano, having produced large crops of Wheat, and in *many cases set the Clover,* where the Guano sown alone by the side of the Phosphate, has failed to do so, (owing no doubt in a great measure to the extreme dry season, it being well established that Peruvian Guano will not act unless exposed to moisture, or mixed with Phosphate, say ⅓ Guano, ⅔ Phosphate.) These experiments having proven so entirely successful, we have therefore made arrangements for its extensive manufacture, and with entire confidence can recommend it to the farmers of the Southern States, as the most CERTAIN, CHEAP and durable manure they can use for all crops.

We are now prepared to furnish orders for Super-Phosphate at a price much less than the farmer could procure the *materials alone* from which it is manufactured, as our facilities are such that we are enabled to manufacture the Super-Phosphate at a small cost, and are consequently able to sell a better article at less price than other manufacturers.

PRICE—$42 50 per ton of 2000 lbs., in bags 150 lbs. each.

☞ All orders should be addressed to

B. M. RHODES,
141 *W. Pratt Street, near Light, Baltimore.*

☞ Farmers will take notice that owing to the great superiority of the Super-Phosphate which we offer for sale,

much smaller quantity is required for any crop, than of any other article of the same name, now offered to the Agricultural Community.

☞As the supply of Super-phosphate will be necessarily limited, it would be advisable for all who wish to test its efficacy upon their crops the coming season, to send in their orders early, to prevent disappointment.

GUANO AGENCY.

PERUVIAN GUANO, No. 1, furnished at the government lowest price, the ton of 2240 lbs., delivered either from ship, warehouse at the Point, or at my warehouse up town, on terms the most advantageous to dealers and consumers.

MEXICAN GUANO, selected from cargoes, rich in Phosphates.

PHOSPHATE OF LIME, manufactured expressly for my agency.

Also, PLASTER, and other Fertilizers.

☞For the convenience of farmers, their orders will be filled either at the guano wharf or at my warehouse, No. 141 West Pratt street, near Light, at all times without delay. Expenses avoided, if possible, and made light when unavoidable.

aug1 B. M. RHODES.

To the Agricultural Community.

Dr. David Stewart:

DEAR SIR:—I have examined the formula for "Ammoniated Dissolved Bones," which you kindly furnished me at our last interview, and have made the necessary arrangements for the manufacture of that article, provided I have your permission to use the formula mentioned. As there is at this time so many articles offered to the agricultural community in the shape of Artificial Manures, I would suggest, that if agreeable to you, I would prefer that your certificate stating the value of the constituents should accompany each package as manufactured, thus giving the assurance to purchasers that the article is genuine, and of as good a character as represented. Waiting your reply to the above, I am yours, &c.,

Baltimore, July 10th, 1855. P. S. CHAPPELL.

To Mr. P. S. Chappell:

DEAR SIR:—You are at liberty to use my formula for the preparation of "Ammoniated Dissolved Bones," and I will authorise my agent to attach my autograph certificate to each parcel of the compound that you make, and that is represented in the sample analysed by me. You will not consider this invidious when I assure you that hereafter I will not be responsible for the composition of any other manufacture except the several packages are designated as above; other lots must depend for character upon the credit of the manufacturer or vender.

Yours Respectfully, D. STEWART, M. D.
Chemist of Maryland
Balt., 25th July, 1855. State Agricultural Society.

In compliance with the above, the subscriber is now manufacturing and offers for sale the

AMMONIATED DISSOLVED BONES,

prepared in accordance with the formula mentioned. Each lot of this compound as manufactured will be submitted to Dr. STEWART for analysis, and his autograph certificate specifying the constituents and their moneyed value to the farmer, will accompany each bag or barrel, thereby securing to the purchaser a uniformity in the article and a guarantee that he is receiving value for the amount expended. In the next number of the American Farmer we shall publish the analysis and report of Dr. STEWART in full. We are now prepared to furnish orders for this valuable Manure in any quantities at the following price:

$40 PER TON OF 2,000 POUNDS.

All orders should be addressed to

P. S. CHAPPELL,
Manufacturing Chemist,
aug1 Office 134 Lombard street, Baltimore.

MONTGOMERY'S GREAT PREMIUM FAN.

MONTGOMERY'S celebeated DOUBLE SCREEN ROCKAWAY WHEAT FAN, is being universally adopted by the Farmers of the South and South West, and has received First Premiums from nearly every Fair at which it has been exhibited. We subjoin the following additional testimonials:

CENTREVILLE, MD.

This is to certify that I purchased of Messrs. J. Montgomery & Brother, one of their wheat fans, the 17th of July, 1852, and I consider it an excellent fan. It is now fanning wheat this day, and I think it is as perfect as when I first purchased it, except the usual wear and tear. I would recommend them to the public. DANIEL NEWMAN.

ROCKFIELD, NELSON CO., *July 23d*, 1855.

Messrs. J. Montgomery & Bro:

I am more than pleased with your Rockaway Fan; had I obtained yours in time on my last year's third and inferior qualitied wheat, (the remnant) I could have saved one hundred and fifty dollars. H. N. COLEMAN, Sr.

All orders addressed to the undersigned, at Baltimore City (Md.) Post office, will be promptly attended to.

J. MONTGOMERY & BRO.,
No. 155 N. High street, between Hillen and Gay, Balto.
aug1

CIDER MILLS! SAFES!! DRILLS!!!

THE Subscribers have recently added to their large and general assortment of Agricultural Implements, &c. viz:—Hickok's superior and most complete PORTABLE CIDER MILL & PRESS, works beautifully by hand, is capable of making six barrels Cider per day, by two men. We have the agency of Herring's patent Champion Fire and Burglar proof SAFE, those in want of a *good* Safe, should buy one of *Herring's*—call and see them. Pennock's and other GRAIN DRILLS, with and without Guano and seed attachment. Good Seed Buckwheat on hand, best qualities Guano, Super Phosphate Lime, &c., for sale on best terms.

Feeling very thankful for the liberal patronage heretofore received, we shall endeavor to merit a continuation of the same. RICE & NORRIS, Agricultural Warehouse,
aul-tf No. 46 and 48 Light street, Baltimore.

SOUTHDOWN SHEEP.

A 3 YEAR OLD BUCK, The sire of a great many fine lambs the last two seasons —BUCK LAMBS, got by the Buck of the Jonas Webb stock, which took the first prize at the last Exhibition in Baltimore, and probably a few EWES, FOR SALE by the subscriber, who refers to the awards of prizes at the successive exhibitions in Baltimore, as sufficient attestation of the superior and established quality of his stock.

M. TILGHMAN GOLDSBOROUGH,
aug1-3t Ellenborough, near Easton, Md.

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